

California **GARDEN**

50 cents

SINCE 1909

OCTOBER-NOVEMBER, 1966

VOL. 57 NO.



FLORAL EVENTS

OCTOBER - NOVEMBER, 1966

SAN DIEGO FLORAL ASSOCIATION PROGRAMS

Third Tuesday, 8 p.m. Floral Building, Balboa Park

Chairman — Captain Charles E. A. Spiegel

Regular Meeting October 18, 1966, 8 p.m.

Mrs. Joan Betts will give a short presentation of the work of the Floral Committee of the 200th Birthday Celebration, and what it can mean to us to be a part of it. Miss Ada Perry will share with us, her knowledge of the choice, planting and care of flowering trees and shrubs, with ways to add color to our gardens and landscapes.

Regular Meeting November 15, 1966, 8 p.m.

Holiday arrangements will be demonstrated by an outstanding arranger. A slight charge to non-members will be necessary.

SAN DIEGO FLORAL ASSOCIATION CLASSES, FLORAL BUILDING, BALBOA PARK

For information, call Mrs. Roland Hoyt, Chairman, 296-2757

1. Flower Arrangement Demonstration Class, 9:30 a.m.
Last Monday of each month. Instructor: Mrs. J. R. Kirkpatrick assisted by Mrs. Frances Schoeneman.
2. Watch for the announcement of coming bus tours. The first tour was a great success and there have been many requests for additional ones. As the seasons change, each month brings new blossoms and plant material, so there is a wealth of new enjoyments to be had on each tour.

FLOWER SHOWS

OCTOBER

- 22-23 CHRYSANTHEMUM SHOW & PLANT SALE
PLAZA, POWAY
VALLE GARDEN CLUB
- 23 TOUR OF COMMUNITY GARDENS
Rancho Bernardo
BERNARDO BEAUTIFUL & GARDEN CLUB

NOVEMBER

- 12-13 7th Annual FLOWER SHOW Theme: "Highlights of Autumn"
Coronado Womens' Club; 1735 Strand
CROWN GARDEN CLUB OF CORNADO
- 19-20 FALL ROSE SHOW
ROSE HILLS, WHITTIER
S. CALIFORNIA ROSE SOC.
- 20 2nd ANNUAL REBLOOMING IRIS SHOW
FLORAL BLDG., BALBOA PARK
S.D. & IMPERIAL COUNTIES IRIS SOC.

COMING!

DECEMBER

- 3-4 CHRISTMAS SHOW Theme: "Greetings! It's Christmas"
La Mesa Womens' Club House
GARDEN SECTION, LA MESA WOMENS' CLUB
- 10 CAMELLIA SHOW — Early gibbed blooms
L.A. STATE & COUNTY ARBORETUM, ARCADIA
S. CALIFORNIA CAMELLIA SOCIETIES
- CHRISTMAS LIGHTS TOUR (Watch for Announcements.)
S.D. FLORAL ASSOCIATION, BALBOA PARK

You are invited to
become a member of

The San Diego Floral Association

Membership includes:

- Monthly meetings featuring outstanding speakers
- A monthly Sunday afternoon garden tour
- Subscription to CALIFORNIA GARDEN bi-monthly
- Use of a large horticultural library

Fill in box with membership desired and mail with check to

San Diego Floral Association
Balboa Park, San Diego, Calif. 92101

Classification of Memberships:

| | | |
|--------------------|---------|--------------------------|
| Individual | \$ 5.00 | <input type="checkbox"/> |
| Family | \$ 5.50 | <input type="checkbox"/> |
| Sustaining | \$10.00 | <input type="checkbox"/> |
| Contributing | \$25.00 | <input type="checkbox"/> |

Name

Address

Zip

CALIFORNIA GARDEN

bi-monthly magazine

Only \$2.50 a year
(add \$1 for foreign postage)

CALIFORNIA GARDEN

Balboa Park
San Diego, Calif. 92101

Please enter my subscription:

Name

Address

City

State Zip



CALIFORNIA GARDEN

October - November, 1966

Vol. 57

No. 5

Among Our Contributors

Maxine E. McCloskey shares with her husband, Chairman of the Conservation Committee of the Sierra Club, a wholehearted devotion to the preservation of natural beauty and bringing awareness of the threats to its destruction. Their two-pronged program is deserving of our active support and participation.

Tak Muto, head of the Muto Floral Co., and Director and Vice President of the Encinitas Chamber of Commerce comes from a family of flower growers. His father was one of the founders of the Southern California Flower Market in Los Angeles. He was formerly a grower and hybridizer of chrysanthemums in the San Fernando Valley. The Sunnyslope Gardens, world-renowned purveyors of chrysanthemums, still market some of his introductions, but he is now growing and shipping carnations only, as head of the Gold Coast Flower Cooperative.

Roy W. Seifert is a graduate in Landscape Architecture of the University of California at Berkeley. A Personality Interest Test in his under-graduate days showed his principal interests to be art and people, so he chose to combine them as a Landscape Architect, in private practice here since 1956.

Samuel Wood Hamill, F.A.I.A. is First Vice President of the San Diego Botanical Garden Foundation. He has had a distinguished career in community service as an active member of a number of civic-minded organizations.

David Olsen is associated with Dr. Michael Neushul in the Department of Biological Sciences at the Santa Barbara campus of the University of California, presently working on algal research.

Lucien Atherton, who has just retired from the faculty of Point Loma High School, is a Charter Member of the Camellia Society and has written often on his particular interest, — the miniature camellia.

THE COVER

Woodland path in Mission Canyon, Santa Barbara Botanic Garden, maintained in its natural beauty, untouched by the ravaging hands of man, is symbolic of the precious heritage that forward-looking conservationists desire to preserve and pass on to future generations that they may find vision and tranquility.

Photo by Gordon Taggart

FEATURES

| | |
|---|-----------------------------|
| Systemics for Shade Tree | 5 |
| Conservationists Face Their Challenges | Maxine E. McCloskey 6 |
| Fire Resistant Plants | Vera Morgan 9 |
| Home Garden Chrysanthemum Culture | Tak Muto 10 |
| Arrangement of School Structures to Land Forms | Roy H. Seifert 12 |
| State Park Proposed for Buena Vista Lagoon | Samuel W. Hamill 14 |
| Algal Cultivation in Teaching and Research | David Olson 15 |

DEPARTMENTS

| | |
|---|---------------------------|
| Floral Association Garden Tours | 5 |
| Roland Hoyt recommends Coral Tree | Roland Hoyt 18 |
| A Book in the Hand | Alice Mary Greer 19 |
| San Diego Botanical Garden Foundation | Penny Bunker 30 |
| 200th Birthday Floral Committee Organizes | Joan Betts 30 |
| Club Directory | 31 |

CALENDAR OF CARE

| | |
|-------------------------------|-----------------------------------|
| Down-to-Earth Gardening | Dick Hull 20 |
| Roses | John A. Farleigh 22 |
| Dahlias | Larry Sisk 24 |
| Camellias | Lucien C. Atherton 25 |
| Iris | Betty Springer Van Dusen 26 |
| Orchids | Byron Geer 27 |
| Bromeliads | Mrs. Cleoves Hardin 28 |
| Fuchsias | Morrison W. Doty 29 |

CALIFORNIA GARDEN

Published Bi-Monthly by the SAN DIEGO FLORAL ASSOCIATION
Floral Association Building, Balboa Park, San Diego, California 92101

All rights reserved.

PUBLICATION BOARD

Alice M. Clark, Chairman; George A. La Pointe; James P. Specht

EDITORIAL STAFF

Editor

Contributing Editors:

Chauncy I. Jerabek, Alice M. Rainford
R. Mitchell Beauchamp, Helen V. Witham

Staff Photographer

Betty Mackintosh

BUSINESS STAFF

Business Manager

Office Hours: M-W-F, 10-3

Phone 232-5762

Advertising

Joan Betts, A. Clark

Advertising rates on request.

California Garden is on the list of publications authorized by the San Diego Retail Merchants Association. Entered as second-class matter, Dec. 8, 1910 at the Post Office at San Diego, California under the Act of March 3, 1879.

ART ENTERPRISES

by Pharis

Announces Fall Classes

DRAPED FIGURES

For Holiday Decorations

CREATIVE STITCHERY

Beginners and Advanced

CHRISTMAS IDEAS

Patterns and
Demonstrations

MANY OTHER CLASSES

FREE LECTURES

New ideas and materials
Thursdays, 10:00 a.m.
and 7:00 p.m.

SALE

Get some rare buys

Special Discounts

On most merchandise

Three Days Only

Sat., Mon., and Tues.
October 1, 3 and 4.
9:30 a.m. - 5:30 p.m.
7:30 p.m. - 9:00 p.m.

—Send for brochure on Fall Classes
1578 West Lewis (Mission Hills) SD 3
or Call 295-5837

Shirley's HAIRSTYLING

Open to Serve You—

Weekdays

7:30 A.M. - 9:00 P.M.

Saturday & Sunday

9:00 A.M. - 5:00 P.M.

913 Catalina Blvd., Pt. Loma

Phone 222-7193

RAINFORD Flower Shop



Flowers for all Occasions
3334 Fifth Ave. 233-7101

PATRONIZE our ADVERTISERS

SAN DIEGO BOTANICAL GARDENS FOUNDATION INC.

needs your donations and bequests for a

GARDEN CENTER

IN BALBOA PARK



Your No Service-Charge Checking Account Bank



shelter island's

Bali Hai

CANTONESE DINNERS — POLYNESIAN FLOOR SHOWS

at Point Loma's Exotic Showplace 222-1181

Your Host, Tom Ham

SYSTEMICS for SHADE TREES?

Implanting shade trees with chemicals that make the trees themselves poisonous to insects is a promising idea. Interest in avoiding problems associated with insecticide spraying is turning much interest toward improved systemic treatments. This is the view of Dr. Carlton S. Koehler, associate entomologist on the University of California campus at Berkeley.

Dr. Koehler said development of effective systemic insecticides that the trees will tolerate has renewed interest in the systemic implant concept of pest control. Systemics, he explained, are chemical compounds that are absorbed by the plant and translocated to its stems and leaves. When effective, they will kill insects feeding on those parts. Advantages of systemic implants over conventional spray applications of insecticides are:

Ability to apply treatment under weather conditions unsuitable for spraying;

Long residual action

Economy of insecticides

Freedom from the destruction of natural enemies of the plant pests.

Simplicity of tools and equipment needed.

Implant treatments can harm the tree when there is overdosing, more than does an overhead spray. Some trees, because of conformation, cannot be treated with systemics and some take up the material too slowly.

The University of California entomologist said that in trials with the chemical Bidrin last year, with implantations at six-inch intervals around the trunks of elm trees, aphids were controlled effectively for 50 days. He also reported season-long control of the elm leaf beetle from similar implantations.

FLORAL ASSOCIATION GARDEN TOURS

October 2, 1966, 2-5 p.m.

Mrs. John G. Clark
7907 Calle de la Plata, LaJolla
Katherine Sneve
7328 Olivitas, La Jolla

November 6, 1966, 2-5 p.m.

Elaine E. Dolle
1945 Agate St., Pacific Beach
George F. Evans
4030 Haines St., Pacific Beach

Watch for F.A. Newsletter
for full details.

Bennett's GARDEN CENTER

FINEST BULBS
READY TO PLANT
FOR A BEAUTIFUL
SPRING TIME GARDEN

GET YOURS NOW AT

BENNETT'S GARDEN CENTER

7555 EADS AVE.

LA JOLLA

454-4241



Announcing:

**MR. EDWARD HAIR STYLIST
WITH CORY'S OF BEVERLY HILLS IN
MISSION VALLEY CENTER**

after Oct. 16, 1966



*Simple
or elegant*

Your garden will be simply elegant

WITH HAZARD BLOC
HAZARD BRIC &
DECOR ROG

HAZARD PRODUCTS

MISSION VALLEY
Frisbie Rd. & Highway 395
297-4141

in EL CAJON
288 Fletcher Parkway
444-3124

CONSERVATIONISTS FACE THEIR CHALLENGERS

by Maxine E. McCloskey

TO NAVIGATE the Colorado River by rowboat as it surges and glides through the Grand Canyon, as it has been doing for 7 million years, is one of the most meaningful experiences; you drift with the changeable moods of the river, floating lazily for a few miles, then rushing headlong through tumultuous rapids, then trying to avoid getting caught in the incredible eddies that will carry one boat upstream just as rapidly as the next boat travels the main channel downstream. A few days of this river experience and you feel the power and energy which has carved the mile-deep canyon of the most complex and awesome cliffs, colors and formations. You hear the river's voice in the rumbling of many-ton boulders rolling and grinding along the river's bottom, continuing the ageless scouring action responsible for the canyon.

Of the many varied features we saw, I enjoyed most our stop on the sand bar within the huge amphitheatre carved by the river from the Redwall limestone cliffs within the Marble

Gorge. The perfectly semi-circular ceiling was a hundred feet high and the sandy floor several hundred feet wide. The view to the opposite side of the river from under the vaulted roof, was of the 500 foot high Redwall cliffs carved into large half-circle curves as the river winds its way in and around and through.

Last year my husband, J. Michael McCloskey, and I took the opportunity to float down the Colorado River through the Grand Canyon with a party of ten in three rowboats. Since Mike is Conservation Director of the Sierra Club, he wanted to see for himself just what was being threatened by the proposed Marble Gorge and Hualapai Dams the Bureau of Reclamation is seeking to construct in the canyon as part of the complex, fantastically expensive Central Arizona Project (CAP). The purpose of the proposed dams would not be to transport precious water to arid Arizona, but would function solely as producers of hydro-electric power, whose power sales profits would subsidize the building of canals

300 miles downstream to transport the water to Arizona. The water would then be sold at less than cost to commercial agriculturalists who are rapidly draining the underground water supply in arid regions of that state. They now want the U.S. government, which ultimately means the taxpayers, to bail them out of their highly speculative operations.

Conservationists, led principally by the Sierra Club, the prominent national conservation club of 42,000 members with headquarters in San Francisco, are opposing these cash register dams with all the vigor and resourcefulness they can muster. Their opposition is equally resourceful. The club had published full-page ads in the New York Times and Washington Post warning the American people about the threat to the Grand Canyon. At the instigation (one suspects), of Congressman Morris K. Udall of Arizona, brother of Secretary of the Interior, Stewart L. Udall, whose Department includes the Bureau of Reclamation, the Internal Revenue

Service announced immediately it will no longer guarantee tax deductibility for the club's contributors until after an audit of the club's books has been completed. The audit is now in progress.

The CAP controversy exposes two surprises to Americans. First, there comes the realization that the entire Grand Canyon of the Colorado, 284.5 miles from Lee's Ferry on the east to Grand Wash Cliffs at the head of Lake Mead, is not protected by the Grand Canyon National Park. To the east of the park the first over fifty-mile stretch is bounded by the Navajo Indian Reservation, the Bureau of Land Management, and the Kaibab National Forest. It is this stretch that contains the Marble Gorge damsite that would create a 300-foot deep pool of slack water. Rising more than half way up the sheer 500-foot Redwall cliffs, it would drown forever their peppermint-striped walls, the magnificent Redwall Cavern and many other geological features. Further, the ageless scouring action of the river would be stopped, its energy tamed.

West of the park, is the Grand Canyon National Monument and the Lake Mead National Recreation Area, containing the last 125 miles of the Colorado River canyon. The proposed Hualapai dam is to be located within the Recreation Area and will back another still lake through the entire length of the National Monument plus thirteen miles within the borders of the National Park. Again, incomparable geologic and biological features will be inundated, and the eroding action of the Colorado River stilled.

President Theodore Roosevelt said in 1903: "In Grand Canyon, Arizona has a natural wonder which, so far as I know, is in kind absolutely unparalleled throughout the rest of the world. I want to ask you to do one thing in connection with it, in your own interest and in the interest of the country—to keep this great wonder of nature as it now is . . ." The succeeding story of the final enactment of the bill establishing the National Park in 1919 is the usual story conservationists face, as they are doing today. It is the tale of well-financed opposition by the extracting interests such as mining, grazing and lumbering, commercial developers and the State of Arizona. As a result of heated controversy, while exploitation continued, the National Park contains only 105 miles of canyon. The remainder of the canyon is owned by a chaotic jumble of administrative agencies which allow varying

degrees of exploitation. The main difference between today's battle over the Grand Canyon, and the thirty-year fight which culminated in the establishment of the park is that there are new villains—the dam-building Bureau of Reclamation and those who dwell in a state of very uncertain water supply and expect the federal government to supply enough water to keep surplus agriculture producing.

In order to remedy the multi-ownership gerrymandered pattern of the entire Grand Canyon, legislation has been introduced this Congressional session by Congressman John Saylor of Pennsylvania that will enlarge the National Park to include the entire canyon.

A second profound shock about the Canyon is that the National Park Service and the Department of the Interior are willing to compromise their legislative charge to:

"conserve the scenery and the natural and historic objects and wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

How can the American public rest with easy conscience when they know their most revered national treasure, probably the most unbelievable sight in the world, is threatened for the financial gain of a few, with the cooperation of the very federal agents responsible for its protection?

If this scandalous proposal sets such a precedent, how can any of our other national parks and monuments be secure? Will the timber cutters finally realize their two-decade demand for boundary changes on the Olympic National Park which would turn 59,000 acres of public parklands over to private exploiters using chain saws? Will the natural steam vents at Yellowstone National Park and Mt. Lassen National Park be tapped for generating still more power?

Conservationists today have been forced to recognize that they must be eternally vigilant to ensure that the gains of past battles are not now decimated under the continuing pressure for economic development. The population explosion is eating up our prime farmlands for housing tracts, stimulating over-use of the existing park and recreation lands, turning our fresh water streams into filthy open sewers, and it is also stimulating developers to view our few remaining wilderness and natural areas as the last source

of available development for a profit. Only 2% of the whole continental United States is presently protected within the national park or wilderness system. If the Colorado Basin Storage Act with dams in Grand Canyon is enacted, the golden anniversary of the National Park Service, being celebrated this year, will be badly tarnished. As the nation's principal conservation agency, the Department of the Interior will have lost the confidence of the American public.

While the Sierra Club and many other conservation groups are actively opposing the above legislation, they are simultaneously proposing, just as vigorously, legislation to establish a Redwood National Park in northwest California. This proposal requires a relatively new task for National Park acquisition; the purchase of private land of superb natural and scenic values. Formerly, most national parks and monuments were already primarily under government ownership, usually by the National Forest Service, or the Bureau of Land Management. Enactment required the transfer of management to the Park Service, usually over the vociferous opposition of extractors and exploiters.

The proposed North Cascades National Park in northern Washington is a current example of a spectacularly scenic area already under federal ownership, with the most highly glaciated mountains in the country, being proposed as a national park. Except for the important fact that the Forest Service is allowing timber cutting in the narrow pristine, fiord-like valleys, there isn't the extreme urgency to enactment of the North Cascades project that exists for the redwoods.

The coast redwoods, the world's tallest living things, are being cut as rapidly as modern chain saws and caterpillars permit. Those fortunate enough to have experienced the coast redwoods know that their quality of serenity and majesty, as well as their huge size, unquestionably entitles them to protection within the national park system. A self-contained ecological unit should be preserved for the study and enjoyment of the future generations. This should be part of America's heritage cherished as closely as the Grand Canyon and other natural wonders.

The redwood lumber industry is adamantly opposed to any Redwood National Park anywhere, and is making exaggerated claims of economic loss. Tragically, the lumber barons are continuing clear-cutting of virgin redwood forests within the two areas cur-

rently proposed for national park status. When Congressman Jeffery Cohelan from Alameda County, California, introduced the Sierra Club's bill for a Redwood National Park of 90,000 acres in Humboldt County on October 21, 1965, he said, "The lumber companies apparently feel that one of the ways they can defeat this proposal for a Redwood National Park is to scar the area so badly that it would no longer be desirable. Some experts feel this can be accomplished in two to five years. The Miller-Relim Redwood Company, which owns most of the private redwood land being considered by the Johnson administration for its smaller 45,000-acre park in Del Norte County, has confirmed its intention to continue cutting. The company's president, Harold A. Miller, said in August that 225 acres are being cut this year within the proposed park boundaries, with 331 acres cut in 1965. Senator Thomas Kuchel (Rep-Calif.), who sponsored the administration's park bill, charged the company with "slashing down these ancient trees, hell bent on their almost complete obliteration." Secretary of the Interior Stewart L. Udall accused the company of deciding "to pursue an outrageous public-be-damned, conservation-be-damned" attitude in their opposition to a Redwood National Park.

Conservationists are involved with many other kinds of problems affecting the natural landscape. Besides the three big national park problems just described, the threatened Grand Canyon National Park, the proposed Redwoods National Park and the proposed North Cascades National Park, conservationists are also deeply involved in campaigns to acquire other units for the National Park system such as the Oregon Dunes National Seashore, the Indiana Dunes National Lakeshore, and the Channel Islands National Park off Santa Barbara, California. Conservationists are also the forefront in the reclassification of federal lands under terms of the *Wilderness Act of 1964*. This legislation marks a great milestone in conservation history, the successful culmination of an eight-year effort to set up workable machinery for classifying vast areas of federally-owned land as wilderness, and thus ensuring their protection from commercial encroachment. Reclassification hearings under the terms of the bill are being conducted now, and require the expert testimony of people thoroughly familiar with each area under consideration.

Conservation organizations find themselves in the role of defender of the public interest in dealing with some private business concerns, such as public utilities, in their problems of location of power generating plants. The Sierra Club's success in the Bodega Head fight in California with P. G. & E. has set a precedent. Now increasingly, utility companies seek the concurrence of such groups as the Sierra Club in new plant location considerations, in order to try to avoid such costly fights in the future.

I have given just brief examples of the kinds of challenges conservationists are faced with today. What is the guiding creed shared by conservationists which prompts such time and energy consuming work on their part;—efforts which are not compensated by financial gain of any kind? First, there is a kind of reverence for life and a love for the land. The conservationist's sense of values goes out beyond the personal or human framework. He sees beauty and intrinsic worth in a majestic mountain, a clear pool or brook, the surging surf, huge boulders or even tiny pebbles because in their very existence and arrangement on the surface of the earth;—they exhibit the harmonies of natural laws that have ultimately produced man. Humans are motivated by many things, indeed the two-legged animal himself is the worst threat to the natural beauty and creatures of the earth. However, some feel an inner awareness of the meaning and bounty of our natural environment, and they want to preserve at least a small part of this fixed, dwindling quantity for the enjoyment of further generations. There is no way to protect the earth from man's potential for destruction except through other men who are not acting from ignorance or for financial gain. The conservationist then, must be an aesthete, an idealist, a dreamer. He must also be indefatigable, relentless, skillful in using the contemporary techniques of mass communication and persuasion. These techniques require the time of trained people supported by volunteers, their contributions and willingness to write their Congressmen and testify before government hearings.

The field of conservation is divided into many different aspects. There are groups devoted to the preservation of

the vast unprotected wild areas; some groups are more concerned with protecting various kinds of fauna, such as the whooping cranes or the giant condors, or migratory birds. Others are concerned about the urban amenities—open spaces within cities; protection of city parks from freeways or development; landscaping highways and approaches; and billboard control. There are garden clubs devoted to the propagation of every species of plant.

In their specialties, each of these groups provides a valuable public service. Frequently, some issues become of such overriding importance and significance, that many conservation groups customarily devoted to more narrow interests come together to lend public support for the cause, without which the efforts for protection will fail. The solution to continuing threats to conservation is in the hands of the American people who must provide the political muscle to force federal, state, and local governments to act wisely so this generation can pass on to the next its priceless heritage of nature's bounty unimpaired.

OUR NATIVE ICE PLANT

by Mrs. J. R. Conrad

When I went to school in Coronado in 1902 the older children were always talking about pirates and how they had hidden their gold somewhere in Spanish Bight. We younger children caught the fever too, and hunted for the pirate gold.

At that time *Cryophytum crystallinum*, the common iceplant covered most of the vacant land in Coronado, and there was plenty of vacant land. On the way to Spanish Bight, we went through fields of this wet watery plant. Crush, crush at every step and how wet were our shoes, but we didn't even stop to think about that. We were on our way to find pirate gold!

Do you know the common ice plant? It is so beautiful with all the shining water crystals along its stems and leaves. It is like a wonderful crystal palace belonging to the fairies. Truly one of God's wonders in the plant world. Most people consider it just another weed, but I always let a few stray plants take root in my garden.

FIRE RESISTANT PLANTS

by Vera Morgan

THE recent meeting of the Floral Association, devoted to fire hazards, canyon clean-up and safe planting choices, has brought requests for a list of fire resistant plants that can be readily found and have been tested sufficiently to be recommended.

The best time to plant small rooted plants, especially on slopes, is after the rain. (See Calendar of Care, this issue, page 21.) If you plan to grow from seeds or cuttings, today is the time to get busy, so you'll be ready to follow through after the first rain. Bands or drifts of fire resistant plants are recommended to be about 25 feet wide for real protection. So this means a lot of plants!

You can get specific information to locate these native plants, and their propagation and care, by writing to Fire Resistant Plants Department of Los Angeles State & County Arboretum

301 N. Baldwin Ave., Arcadia
Santa Barbara Botanic Garden
1212 Mission Canyon Road,
Santa Barbara

Rancho Santa Ana Botanic Garden
1500 N. College Ave., Claremont

If you plan to go on the bus tour to the Los Angeles State and County Arboretum, that is being sponsored by the San Diego Botanical Garden Foundation, you can see these plants on display in containers there, so that you can get to know them and make your choice.

According to the Los Angeles Brush Clearance Ordinance, the area 30 feet from the house can be planted with Arabian Scurf Pea, *Psoralea bituminosa*, Green Santolina, *Santolina virens*, and the Sunrose, *Helianthemum nummularium*. *Helianthemum* come with apricot, flame red, yellow, orange, pink and white flowers that are color-

ful above the foliage from April to June. It is very effective used with prostrate rosemary, or the small-leaved baccharis.

In the next 70 feet from the house, any of the following are recommended: Saltbush *Atriplex halimus* and *A. breweri*, Prostrate Rosemary *Rosmarinus officinalis prostrata*, coyote bush *Baccharis pilularis*, Gum rock-rose *Cistus ladaniferus* or Purple rockrose *Cistus villosus* and hairy Yerba Santa *Eriodictyon trichocalyx*. This group of plants is deep rooted and will aid in controlling erosion as well as surviving dry conditions (if they are watered once a month the first year they are set out).

The large-leaf ice plant is no longer recommended because it dies out in patches, making a fire hazard in summer, and it may become so heavy with moisture as to pull out of the ground during the winter rains. The small-leaved varieties are now recommended and they come in a number of attractive colors that can make stunning variations in pattern if planted in drifts of harmonious colors.

The dependable elephant plant *portulacaria afra* has no flammable litter, and is very drought resistant and easy to start from cuttings, but it can grow to 12 feet, or higher. It can easily be lowered by pruning when needed, and the cuttings will start more plants.

Woolly yarrow, *Achillea tomentosa* is a drought tolerant ground cover which spreads rapidly and holds the soil with its matlike roots. It has dark green foliage and yellow flowers in May and June, which should be cut and removed so that they will not form flammable litter. African Creeping Daisy, *Osteospermum frutescens*, is another ground cover for erosion

control. It has a good green color and spring blooming large daisy-like rosy lavender flowers about 2 inches across.

Algerian ivy, *Hedera canariensis*, and English ivy, *Hedera helix*, Parrot's beak, *Lotus bertholletii*, and Cotton Leaf, *Helicbrysum petiolatum*, with white foliage and creamy white flowers, are good between the house planting and the drought resistant planting, since they require more frequent watering.

Among recommended shrubs, for contrast in large plantings, are Carmel Creeper *Ceanothus griseus horizontalis*, Toyon *Heteromeles arbutifolia*, Italian Buckthorn *Rhamnus alaternus*, Lemonade berry *Rhus integrifolia*, brown eyed rock rose and olean-der, Sea Urchin bush *Hakea laurina*, Holly-leaved cherry *Prunus ilicifolia*, Catalina Cherry *Prunus lyonii* Laurel Sumac, *Rhus laurina*, California Bay *Umbellularia californica* and Myoporum laetum.

Drought resistant trees on the recommended list are the California Pepper *Schinus molle*, the Brazilian Pepper *Schinus terebinthifolius*, California Laurel *Umbellularia californica*, and Carob *Ceratonia Siliqua*.

The very first step, which you can begin today, is to remove the fuel which means to clear the highly volatile chaparral from around your property. Then you can replace with a temporary grass cover while you are growing on your fire resistant plants from seeds or cuttings. Plant horizontal rows on slopes. The Agricultural Extension Service of the University of California suggests planting of Smilo or Harding grass, barley, annual rye grass, Blando brome or Bird's foot trefoil for erosion control while your more permanent planting for fire resistant plants is getting under way.

HOME GARDEN CHRYSANTHEMUM CULTURE

FROM A COMMERCIAL GROWER'S VIEWPOINT

by Tak Muto

MANY dramatic changes have taken place in commercial chrysanthemum production over the past fifteen years. Chrysanthemums, fall seasonal flowering plants, are seen on the market every month of the year.

Chrysanthemums are short-day or long-night plants. The plants are brought into bloom throughout the year by means of adequate control of temperature and day length. To accomplish this means, the day periods are shortened to initiate bud development by covering the plants with black cheesecloth or plastic in the late afternoon. To prevent bud initiation, the long night period is split into two shorter nights by artificial lighting of the plants a few hours each evening.

The response of well grown plants and blooms is affected by proper application of these factors. This technological application has accelerated the former seasonal chrysanthemum plant into three producing crops a year. This increase in productivity has made it possible to operate an economically sound chrysanthemum growing business and the plants can be offered at a lower price in order that more flower lovers can enjoy the product.

Outdoor chrysanthemums are grown under limiting factors. The outdoor grower has no way of controlling temperature and it would be impractical for home gardeners to grow chrysanthemums off season as the commercial producer does.

Growing chrysanthemums is an art. There is no set formula as to when or how often the plant should be watered or fertilized. Sandy soil will require more frequent watering and will also have a lower nutrient level of retention than that of heavy soil.

Rather than a cookbook type of recipe of "how to grow," it is more important to learn factors that change plant behavior. Know conditions that cause good growth and what causes poor growth. Through this knowledge every gardener will have the way of

doing things and still obtain the same result, and often times he does a better job. Plants go through various stages of growth from infancy to adolescence and maturity. Annual plants produce reproducing organs or flowers and seeds through their age of growth only. However, perennials such as chrysanthemums require a certain environment to produce the same effect.

In order to go through the transition stage, they require an optimum condition to transform growing tip to

flower bud. The optimum condition to initiate buds requires short-day or long-night period associated with warm 55° to 60° night temperature. This is called the photo period. Some varieties may require a longer photo period, therefore there are early, midseason and late varieties of chrysanthemums.

The evening temperature is the critical one due to transpiration taking place during this period. The variations of these two factors, the day length and temperature not coinciding



STERLING. Large incurved white with good stem and foliage.

to optimum conditions will create behavior such as premature bud or blindness. Blindness is caused by low temperature as found late in the season. Premature bud is caused by insufficient or disrupted long night period. This will occur in early season when long summer days are approaching into shorter days.

Many of the difficulties found in various stages of growth are connected with soil. Soil is one factor that can be controlled. Therefore, spend time and money if necessary for proper preparation of the soil or all further work in cultivation is wasted.

Good crops of chrysanthemums are grown in all types of soil, so soil itself is not the important factor. It is the preparation and management of soil that is of importance. Soil must be prepared in order to maintain an open, well aerated condition. It must drain well in addition to having some moisture retention capacity.

A good formula for mum soil is: Apply one-quarter to one-half volume of organic material, such as peat or well rotted manure. Heavy or adobe soil should be supplemented with sand or sponge rock. There are many good commercial soil amendments that will serve the purpose of developing good soil structure. They are clean

and with absence of harmful minerals. Poor growth of plants is often found in soil that is re-used immediately. This could be due to high build-up of the nutritional level due to several applications of fertilizer from previous planting. A good rest by tilting and leaching by rainfall will freshen up this soil.

Chrysanthemums start off better with low nutrient, and later you can increase nutrient to the recommended level. It is for this reason that they often start off better in new soil, due to low nutrient level. For those who are using a soil test kit, the recommended nutrient level is—Nitrate Nitrogen, 10-25 p.p.m.; Phosphorous, 5-10 p.p.m.; Potassium, 20-40 p.p.m. and Calcium, 200 p.p.m., with a soil pH of 6-7. Some growers learn to recognize good growth and make necessary applications with respect to symptoms of deficiency or toxicity. Under this practice, watch the lower leaves. One must also learn to recognize the difference in symptoms in temperature growth or nutritional growth.

Most nutritional problems are a result of failure to understand the needs of plants. How much should be applied depends largely on the size of the plant and its stage of development. Also on the amount of leaching of

nutrient from the soil in watering practice. A good general formula is one in which the N.P.K. ratio is 1 to 1, such as 6-6-6 or 8-8-8 fertilizer. This formula can be used on most all plants found around the home. However, chrysanthemums will benefit greatly with the addition of organic nitrogen such as blood meal or sludge to this general formula. This is required in the early stage after the plants are established.

Poor growth is often caused by infestation of fungi or harmful organisms affecting feeder roots. In some cases this can be detected by decay on the tips of the feeder roots. In the event that the soil is contaminated, it should be sterilized or fumigated with a soil fumigant a few weeks before planting the chrysanthemums. If the plants are stunted with no appreciable growth, this may be an indication of high soluble salt. Such conditions are caused by improper watering or poor drainage.

All nutrient absorbed by plants is in the form of salts. All organic matter, through the decaying process, becomes mineralized and the nutrients in them are converted into salts that are absorbed by plants. Some salts do not contain nutrient. All salts are

(continued on page 18)



Cascade Display, with other types, at the Annual Chrysanthemum Show, Sunnyslope Gardens, San Gabriel, California.

HARMONIOUS ARRANGEMENT OF SCHOOL STRUCTURES TO LAND FORM

LAND DEVELOPMENT PROGRAM
for CARLSBAD JUNIOR HIGH SCHOOL

by Roy H. Seifert

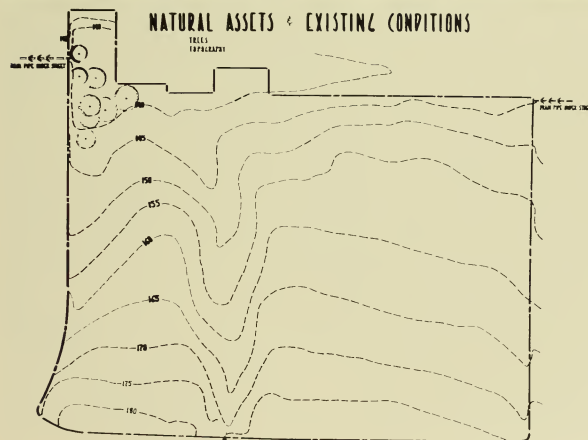


Fig. 1

IN THE beginning there was only the land—gently rolling hills, a few trees such as one sees on most Carlsbad land in its natural state.

When an early site plan (Fig. 2) was proposed along engineering concepts all school buildings were arranged in regular blocks and rows on a tabletop-level plot of land. All natural contours were eliminated, at a huge cost for earth moving and adequate drainage. Buildings were lined up in uniform size with windows facing each other across narrow courts where there could be little air circulation and no vista views. The total effect would bring to mind the jail yard concept and it certainly was not conducive to developing imagination. Athletic fields and running track were equally stark and uniform.

It was at this stage that the Carlsbad Elementary School District retained Roy H. Seifert, Landscape Architect, to prepare detailed site plans for their new Junior High School. This is one of the few School Districts that feels strongly enough about the importance of proper site development and garden beauty to have the foresight to insist that a Landscape Architect must develop the site portion of their building plans and specifications before the actual building plans are accepted.

Mr. Seifert, like the engineering firm that preceded him, began with the topographical map (Fig. 1), but from a different angle. His plan was premised on the turning of a liability into an asset. His first decision was to maintain some of the natural character of the structure of the site, and to arrange the drainage so as to fit the land rather than to be forced on the existing topography which was, after all, characteristic of the area. The site plan should not be alien to the community around it but should become an integral part of the community living. By turning a liability into an asset, he estimated that it would be necessary to move 44,000 fewer yards of dirt and would save \$20,000 in earth moving alone.

Next, the buildings for classrooms, administration, laboratories, applied arts, amphitheatre and shower and locker buildings for the athletic fields were arranged on the site plan, parallel with the contours, which made a staggered arrangement that fitted them more naturally into their landscape setting. (Fig. 3) Then the drainage problem of the sites was developed in a sympathetic manner to retain the natural character of the land, by making

a curved lower area of soil with the natural drainage of a stream bordered with trees and tall shrubs that would separate and screen the classroom areas from the athletic fields. The landscape needs continuity, and this plan provided the elements of visual continuity in tree patterns, shrub and ground cover patterns and walk patterns, together with a sensitive arrangement of grade changes. The amphitheatre fitted naturally into this curved sloping area. Prominent land features were recognized in siting roads, parking areas, tennis courts, and running track to fit the land not force them on it in geometric fashion. The entire school site was treated as a design problem with emphasis on the purpose for which it exists.

It was extremely important that the necessary grading be accomplished so as to fortify the school program. Grading plans were treated as a sculptural project rather than as a "cut and fill" project only. All exterior areas were treated with this purpose in mind, siting the buildings and arranging the grading so that there would be a relationship between similar use interior-exterior areas, thus contributing to intelligent site utilization.

The contoured drainage areas were made as multiple-use outdoor laboratories. Special recognition was given to planning of entries, inviting the pupils into the site from three sides. Parking areas were designed to fit the site, repeat the refined lines of the buildings and become interesting elements in their own rights by making them smaller, free-form in style and available to each entry area. They were located to serve individual clusters of buildings. This arrangement not only allowed parking close to the destination but also reduced the usual single mass of glaring asphalt paving that blots out the artistry of the landscape plan.

Thus was developed an inviting and completely utilized land use of the site. What is more conducive to educational experience than a comfortable and beautiful environment? Beauty is not something that can be applied after a project is otherwise complete. Building design, lay-out of land areas and selection of trees and shrubs must all contribute to make the environment a pleasant place to be, as well as fulfilling all necessary functional needs.

According to the *Checklist on Better Uses for School Sites*, by the Michigan Department of Public Instruction, Lansing, Michigan, the major functions of school sites are:

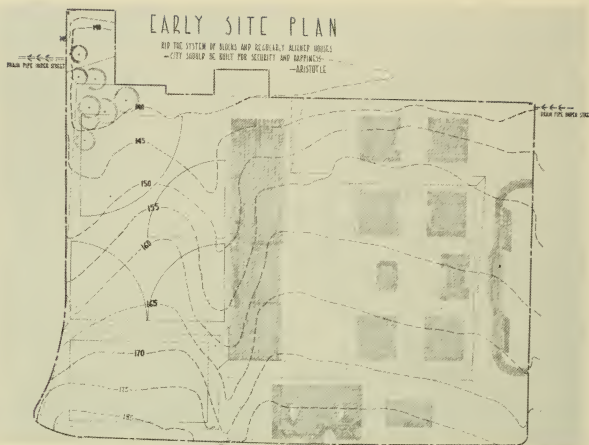


Fig. 2

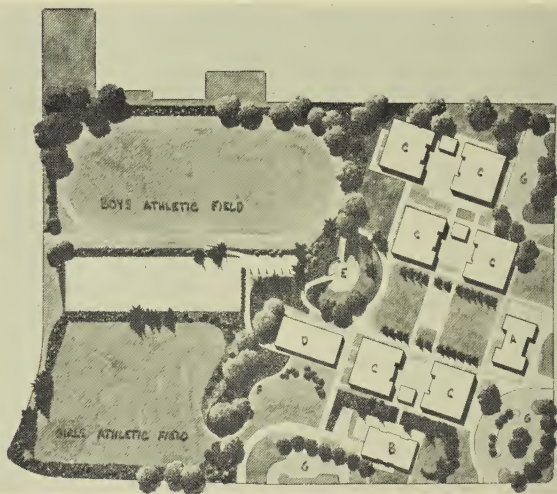


Fig. 3

DEVELOPED SITE PLAN

- | | |
|---------------------------|----------------------------|
| A Administration Building | D Shower & Locker Building |
| B Applied Arts | E Amphitheater |
| C Classroom Buildings | F Outdoor Laboratory |
| | G Parking Areas |

1. Broader instruction programs
2. More community use of community owned land
3. Wise stewardship of the land
4. Improvement and more efficient operation and maintenance of the school plant through control of the micro-climate.

School buildings and grounds are successful to the degree that they provide space and facilities for the learning process. No element on the site should exist unless it promotes the operation and administration of an educational program. School site utilization should include all subject material, needed community facilities developed to serve the total community 7 days a week and 52 weeks a year. Education means understanding through visualization and contact with the world around us. Students may have added opportunities to observe and learn good management practices through site arrangement. The citizen of the future must be aware of water conservation practices, soil conservation, recognition of wildlife habitats and the conservation of human resources.

The development of the school site in an imaginative and sensitive arrangement of all elements of the site may help to achieve these curriculum objectives:

- a. Citizenship
- b. Critical, creative thinking
- c. Occupational and vocational competence
- d. Economic efficiency
- e. Physical and mental healthfulness
- f. Wise use of leisure time
- g. Aesthetic appreciation
- h. Increased interest in new subject material

"In this present age, the democratic problem in education is not primarily a problem of training children: it is a problem of making a community in which children cannot help growing up to be democratic, intelligent, disciplined to freedom, reverent of the goods of life, eager to share in the tasks of the age. A school cannot produce this result; nothing but a community can do so." This quotation from *The Human Community*, by Joseph K. Hart, published by Harper Brothers, states the theme of the modern educational process in California.

There is just as great a need for design as there is for engineering in providing the school atmosphere. Education is, or should be, the attainment of understanding and appreciation, not merely the accumulation of knowledge.

State Park Proposed For Buena Vista Lagoon Now

by Samuel W. Hamill

The Buena Vista Lagoon between Carlsbad and Oceanside, containing the Lieutenant Maxton Brown Bird Sanctuary, and the Hosp Grove, a unique canyon forest of large eucalyptus trees, are under study right now for a State Park. All Southern Californians are urging that more land be acquired here and made into a State Park for lagoon protection and preservation forever from bulldozers and shoreline exploitation and construction.

This fresh water lagoon at the mouth of Buena Creek is one of the few natural aquatic scenes remaining relatively unspoiled, south of the San Francisco area, on Route 101. The Nature Conservancy already owns or has easements on 80 acres of the shoreline. The proposal is that the state buy about 120 acres more to keep the entire lagoon in its present natural state. Access roads, picnic grounds, perhaps facilities for nature study, riding and hiking, will disturb the natural scenery as little as possible as well as keep the cost of acquiring and development as a State Park for nature lovers to a minimal cost.

The fresh water of Buena Creek offers refuge to thousands of migratory fowls each year as it is one of the few remaining sanctuaries for fowl on the Pacific Flyway. Also, 200 species of wildlife are found here the year round. This scenic spot is visited by many groups of people every month, including school and college classes coming from considerable distances, even from other states.

The Buena Vista Lagoon Committee, headed by Dr. Roy Palmateer as chairman, The Buena Vista Audubon Society and the Nature Conservancy, together with Mrs. A. W. Shaw (a leading lagoon champion for many years), and other civic leaders, are spearheading an active movement. Through their efforts, the California Legislature in February, passed a resolution asking the State Division of Beaches and Parks to make a study towards its possible acquisition.

A letter writing and postal card campaign is sponsored by the Palmateer Committee, and is going full steam right now. With a goal of at least 5,000, more than 1,000 letters and cards have already been received. Quite a few are from out of state and many distant parts of California. This indicates that tourists and anyone who has passed this unspoiled lagoon on U.S. 101, has remembered its natural peacefulness with pleasure. Time is running out on Nature-made attractions in Southern California in favor of less peaceful man-made ones.

Add your endorsement of the devotion and work of these local committees by writing, right away, to:—

Charles Turk, Secretary
State Park Commission
Division of Beaches and Parks
Sacramento, California

The study of this area as a park site has been under way since June 21, 1966 and their recommendations to the California Legislature are expected at any time.

The weekend of November 5-6 has been set aside by the Palmateer Committee for open house tours and talks on the lagoon and grove for the general public. Their program calls for public viewing of the two sites from certain designated stations as well as for lectures on wildlife preservation plans and other topics by knowledgeable speakers. Anyone wishing to contribute to Committee Funds or to gain more information on the achievement of their goals, may contact the Palmateer Committee at 605½ Third St., Oceanside, California. Several carloads of nature lovers from this area are expected to attend the Open House and express their approval of the committee efforts. As well, many more will be sending cards and letters endorsing the establishment of the new State Park. Get your letter or card in the mail right away, with your vote for a nature lover's park on this beautiful site for the enjoyment of ourselves and of future generations.

ALGAL CULTIVATION IN TEACHING AND RESEARCH

by David Olsen

ALGAE are unicellular or multicellular photosynthetic plants that may be found in every type of habitat. They are represented by the common pond scum, the "moss" on the north side of trees, the pigmentation of snow, and the large seaweeds. It is the cultivation of the seaweeds and their use as tools in teaching and research that we shall discuss in this article. Out of the seven Phyla which make up the algae, three are represented in the seaweeds. These three are: The Green algae, exemplified by the ubiquitous sea lettuce; the Brown algae which make up the kelp beds off the California Coast, and the Red algae, somewhat less conspicuous forms commonly found in rocky intertidal and subtidal regions.

While seaweeds have been used as food and medicine since the beginning of recorded history, cultivation has been carried on only in recent times. Cultivation in the broadest sense was done in Ireland as early as the 19th century. This involved "planting" rocks in the intertidal sand, thereby providing an increased area for the plant to grow. This technique is the first step away from the simple harvesting of naturally growing plants. Simple harvesting is conducted at present in many countries, especially in Japan, where 310,000 tons of seaweed were harvested in 1955. On our own coast 100,000 wet tons of the giant kelp, *Macrocystis*, are harvested in a good season. Cultivation as used in modern agriculture implies manipulation of the environment in which the plant is grown and selection of those stages in the life history of the plant suitable for cultivation. Research in the laboratory under carefully controlled conditions can provide information that may be of use to the

marine agronomist. Eventually, we may achieve the same degree of success in marine agriculture that we have in terrestrial agriculture.

In the laboratory, culturing takes one of two different basic forms. If there is a supply of running seawater available, culturing is a relatively simple matter, requiring only a light source. The running seawater technique makes it possible to emulate natural growing conditions so that both large and small forms may be grown as soon as they are collected. This system requires larger amounts of space and maintenance than the dish culture method where small plants or plant parts are placed in dishes of seawater. Even though the continuous flow method for cultivation normally yields optimum success for the time invested, it has an inherent disadvantage as an experimental system in that the "quality" of the water varies with time. At present there is no other good method for growing the larger seaweed.

The second type of algal culture is more elaborate, requiring the use of nutrient-enriched media in dishes. A variety of recipes for the medium to be used have been concocted and give varying degrees of success.¹ These media are often used in small dishes for smaller algal forms although they have been used with some success in larger containers. An advantage of the dish or static culture method is that it is possible to grow the organisms under sterile conditions, sometimes necessary for critical experiments.

The use of algae as subjects for research can involve growing the organisms for use in a variety of experiments, although the successful cultivation of algae can be a goal in itself. For example, at the University of Cali-

fornia at Santa Barbara, we have taken rocks and shells furnished by commercial fishermen and placed them in our tanks under different light and temperature conditions so that the seaweeds on them could be cultivated, identified, and studied. Utilizing this technique several new species have been discovered and reproductive stages which were previously unknown have been obtained. With some of this material we have been able to study the life history of the organism through several generations. We found that by growing some of these algae under different light conditions we were able to obtain plants of the same species which arose from the same parental stock but were quite different in their general appearance (Fig. 1). The findings from this type of study can have both taxonomic and ecological significance.

The use of algae to test ideas is appropriate for several reasons, the most obvious one being the relative ease with which they may be cultured in both running seawater systems and in dish culture, the second reason is the rapid growth rates present in algal material (Table I gives approximate growth rates obtained for several species of algae grown by students in algology class during the fall and winter of 1965). This rapid growth rate allows the investigator to observe the effects of his manipulations in a relative short time and make changes

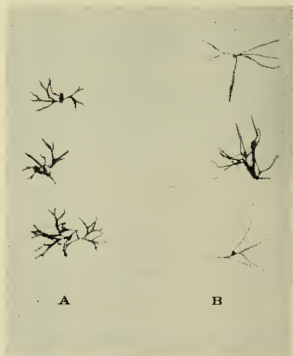


Figure 1. Herbarium sheet of *Rbodiumia* plants grown under different photo periods (200 ft. cndls. light intensity) for two months.

A. Constant illumination

B. 8 hours light, 16 hours darkness

in his technique if the experiment is going to be unsuccessful. The rapid growth rate also allows for maximum replication of the experiment in the time available. The growth rates of these algae are admirably suited for class projects since the student usually has a short period of time during which he is able to conduct his researches. With rapidly growing algae, he is frequently able to conduct interesting and stimulating experiments.

The easiest way to teach is probably to rely upon already prepared course outlines, prepared slides, and preserved materials. While such an approach lightens the load for the teacher, the student may find it to be an exercise in unbearable drudgery. Perhaps the most stimulating type of course, both for students and instructors, is one where some living material is used. The use of live material usually involves some sort of culturing. I suggest that an effective teaching approach is to have the members of the class culture algae. In this way the student becomes involved, and interested. When, as is usual, the algae grow, he becomes interested in growth rates and the basic techniques for measuring them. The average student will usually bring plants in from field trips and attempt to culture them. This is particularly effective when subtidal plants are collected since they generally grow well in the laboratory.

After the student has grown several algae for a while, he usually has some sort of specific question that he is interested in answering about one of his forms. If he does not, the instructor can furnish him with material for a project. Student projects based on algal culture techniques can range from the very basic to very elaborate and subtle experimental designs necessitating statistical analysis of the re-

sults. Basic experiments which lend themselves to class use usually take the form of some sort of measurement of growth rates, either of large forms or cultivation of reproductive products from these forms. These growth-rate experiments can take a physiological turn quite simply by testing the effects on the growth rates caused by the addition or deletion of nutrients from the media. This type of study is usually done in a non-circulating system, a feature which makes it feasible for inland schools.

Where a supply of running seawater is not available, salt-water chemicals are readily available through tropical fish dealers. This artificial seawater is relatively constant in its constituents, thereby minimizing the number of variables that the student must deal with.

Two class experiments which were done in an algology class are described below to illustrate the types of experiments that can be done by undergraduates utilizing the growth rate idea.

In Experiment I, the student set up four culture tanks at two temperature levels and with two nutrient conditions within each temperature regime. His results were a simple comparison of the growth rates of the different algae that he grew in the different conditions. Table I summarizes the findings of this experiment.

Table I. Experiment I. Differences in growth rates resulting from different nutrient (nitrate and phosphate added) and temperature treatments.

The results of this experiment led the student to attempt to answer several other questions which arose during the course of this experiment and eventually resulted in his development of a technique for grafting red algal tissues on themselves. His grafting

experiments were probably the first of their kind and will lead to further researches in this field.

In Experiment II another student studied the nature of the growth and maintenance of form of leaflike proliferations of the red alga *Halymenia*. These proliferations were first noted by students while they were culturing various forms furnished by the instructor. In this experiment pairs of these proliferations were separated and grown on clips in running seawater. One member of each pair was marked with a grid of holes while the other was left unmarked as a control, (Fig. 2). The normal growth rate of *Halymenia* proliferations had been previously determined. In the experimentally treated proliferations, the holes spread at different rates within the same blade, thus identifying the areas of most rapid expansion of the plant body. This experiment lasted 27 days from start to finish and explored an area of plant development that has been little studied.

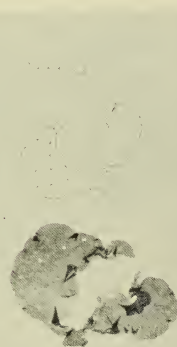


Figure 2. Growth of *Halymenia* proliferations showing areas of differential enlargement of the holes in the experimental (left) proliferation.

Top — Tracing start of experiment. Weight 0.14 gm.

Middle — Tracing seven days later. Weight 0.27 gm.

Lower — Photo of plant twenty-seven days from start. Weight 1.14 gm.

Growth-rate over 27 day period was 26.5% weight increase per day.

TABLE I EXPERIMENT I
GROWTH RATE UNDER 4 CULTURE CONDITIONS

| Genus | Nutrients added 18 deg. C. | No Nut. 18 deg. C | Nut. added 12.5 deg. C. | No. Nut. 12.5 deg. C. |
|---------------------|-------------------------------|----------------------|----------------------------|--------------------------|
| <i>Halymenia</i> | 19%/day | 11%/day | 14 %/day | 11 %/day |
| <i>Sciadophycus</i> | 13%/day | 7%/day | 25 %/day | 7.6%/day |
| <i>Dictyota</i> | -11%/day | 20%/day | 1.7%/day | 5.8%/day |
| <i>Dictyopteris</i> | 4%/day | 5%/day | 3.2%/day | 6.6%/day |

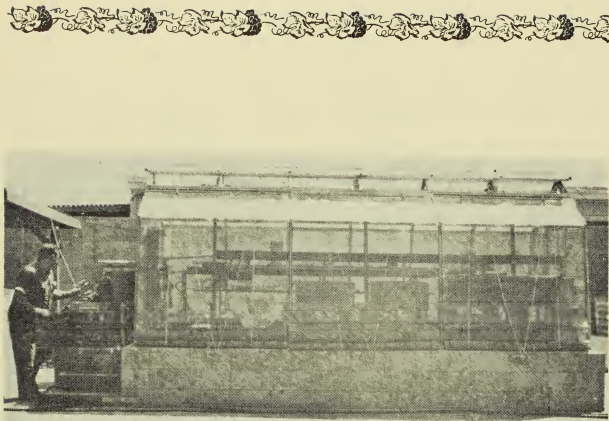


Figure III. Greenhouse for algal culture showing refrigeration unit for cooling seawater.

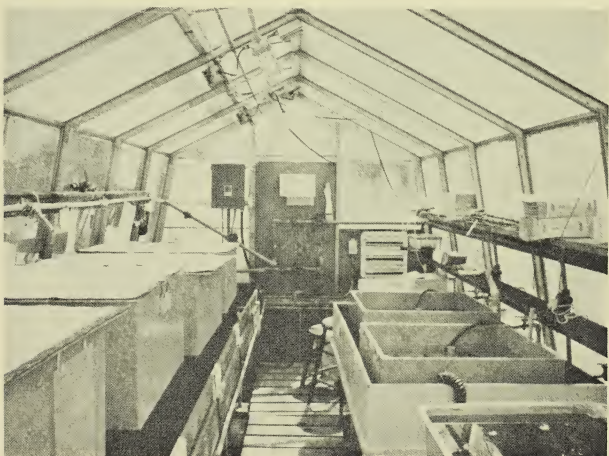


Figure IV. Inside of greenhouse showing tanks used in culturing. Plastic on tanks at left is used to regulate light intensity within the tank.

The experimental approach is almost impossible without adequate facilities. A system with running seawater, a refrigerated cold room for dish culturing, several photoperiod chambers, and a small greenhouse with a refrigeration unit (Fig. 3 and 4) all permit a variety of algal-culture studies at Santa Barbara. With increased interest in plant resources of the sea, more attention will doubtless be given to problems of algal cultivation, for teaching and research and perhaps ultimately for commercial utilization as well.

For the research oriented institution, algal culture in the class can serve as a testing ground for possible future researches. Preliminary experiments that can ascertain whether or not a certain organism or experimental approach is feasible, can frequently be done in the form of class projects. Students sometimes explore aspects of the problems that have not occurred to the teacher. Oftentimes these projects can have theoretical implications which the experienced teacher can use to demonstrate lecture material. Reference to these findings by the instructor in the course of his lectures can serve to make obscure points clear by relating them to the student's actual experiences.

BIBLIOGRAPHY

- (1) Provasoli, L., McLaughlin, J. J. A., and Droop, M. R.: *The Development of Artificial Media for Marine Algae*. Archiv fur Mikrobiologie, Bd. 25, S. 392-428 (1957).

Additional information can be found in any of the references listed below.

Chapman, V. J., *Seaweeds and Their Uses*, Methuen and Company, London, 1950.

Dawson, E. Y., *How to Know Seaweeds*, Brown Company, 1956.

Dawson, E. Y., *Marine Botany: An Introduction*, Holt, Rinehart and Winston, Inc., 1966.

Smith, G. M., *Marine Algae of the Monterey Peninsula, California*, Stanford University Press, 1944.

Roland Hoyt*
Recommends

CORAL TREE

Erythrina corallodendron

RECENT adoption of *Erythrina*, the Coral-tree as the official tree of Los Angeles suggests a quick look here. This, at one time and only recently, was considered here in San Diego for that purpose, but was passed over along with the whole idea . . . in favor of carnation. The northern city can be congratulated in having done something, an excellent move toward a unifying color motif for the entire area and a richly defining element for its posture as a moving city. It deserves the term exciting, even startling for color and accomplished with so little effort. The group as a whole has the great asset and appeal of this tropical and near tropical color by species each day of the calendar year, unless in deep cold when the tree may survive to bloom another year.

Here, again, is a genera that is not sharply delineated, with member species not readily defined, with botanical determination usually doubtful, mostly impossible for the gardener. Even the professionals are not quick to call some of these. The drawing by Alfred Hottes is labeled *Erythrina americana*, but the taxonomy has been worked over so much that this name seems largely to be discontinued, with *E. coralloides* or *E. corallodendron* taking precedence now. The latter is more apt to be available in the nursery trade.

This tree comes from tropical regions and the Mexicans claim it as



their own, fondly calling it "Colorin or Coralbean." It will be seen frequently in the Pedregal near the University, in Mexico City. Larger specimens will be found scattered over the warmer parts of the country. The height is usually rated at 20 feet but I distinctly remember one in a garden near Fortin, Mexico that must have stood 25-30 feet or possibly to 35 feet. This area is almost tropical in character. The flower of this species is dark scarlet or crimson, blooming two or three times over summer when it settles down to production. The keel barely opens to show the emergent stamens as seen in the sketch. Blooming is more satisfactory if the wood has been well ripened . . . withhold

moisture and don't fertilize through late summer and winter. The leaf is ovate, slightly heart-shaped at the base or rounded, the petiole carrying quite substantial prickles, but this is a variable with some individuals completely unarmed. The full-rounding head is dense with the medium green foliage by late summer, thinning out then or dropping entirely.

These trees want warmth essentially, although some species will survive several degrees of frost if conditioned. They want the sun, fair air humidity, but not heavy fog as of the coast. The soil should be rich, dryish or quite moist. They grow rapidly and even with the light, soft and punky wood, are sturdy in the wind.

CHRYSANTHEMUMS

from page 10

harmful beyond the needs of plants. Heavy watering will leach away this excess of salts.

One important factor in growing chrysanthemums is starting off with the right plant. Make sure that the plants are healthy and disease free. If you are making your own cuttings, bear in mind that certain diseases such as verticillium wilt, will move up the plant tissue at a slower rate than the plant growth. Therefore, in taking cuttings, a tip cutting from the new growth of a parent stock would be a safe practice in acquiring a clean plant from a parent that may be diseased.

Plants should be planted in an area

benefited by sunlight throughout the day with good air circulation but not draft.

Pinching is done to increase flowering stems. This is done after the plant is well established, with new growth. Pinch the plant in the soft wood, about 8 to 10 inches above the ground. Disbudded larger-flowering varieties should be pruned to 2 or 3 stems to develop larger blooms. All lateral branches should be removed at the leaf axil of the growing stem. Buds appearing earlier than August may not develop properly, due to improper environment. These may be premature or crown buds. The next branch growth will develop terminal buds from August on. All varieties of chrys-

anthemums will bud and bloom 2 to 3 weeks earlier along the coast due to the overcast of the marine layer of air. This environment advances the season earlier than in the inland area.

It would be most difficult to recommend which varieties to grow, as there are several hundred new varieties being introduced each year. There are also many types for your choice: Button, Pompon, Daisy, Spider, Rayonante, Spoon, Cushion, Anemone, the larger Exhibition and the sturdy Decorative, and others.

These are some of the factors we have learned through experience and we hope that this information will be helpful in order that you may grow more beautiful flowers.

A Book In The Hand

by Alice Mary Greer

Editorial Note: Inasmuch as conservation, especially bird and plant conservation, is an important angle of the activities and interests of the San Diego Floral Association, we welcome the receipt for review of some new publications in this field. These books are ready in our Mary A. Greer Memorial Library for your reading.

***The California Condor:* Carl B. Koford; Dover Publications; 1966; paper bound; 154 pages; \$2.00.**

An unabridged and corrected republication of the work originally published in 1953 as Research Report No. 4 of the National Audubon Society.

The author, Karl B. Koford, of the Museum of Vertebrate Zoology, University of California, spent days of patient vigil-watching at condor nests, some of the time living in a cave not unlike that occupied by the condor a half mile away.

He brings an unusually fascinating account of the birth and life habits of this grotesque bird, which is one of the rarest of North American birds. It has special interest to us here in San Diego County, because it is fast disappearing in this area. Except in Tulare County, all the known nesting has occurred within a belt 400 miles long and 40 miles wide, reaching from Santa Cruz to San Diego Counties.

Palomar Mountain has been recorded as a most likely roosting and possible nesting spot, although there are no substantial records of condors appearing in the Julian, Palomar or upper San Luis Rey River region since the year 1910.

Condors are unattractive in appearance and in their habits. Yet they are truly majestic when seen in their natural rugged environment as they sweep with their 11 to 14 foot wing spread in superbly controlled flight over crests of ridges and great slopes of tangled chaparral. The air passing through the wing tips sets up a steady

whine as it is pressed into service to keep the great glider aloft.

Condors are not predatory; they are carrion feeders of trapped or slain deer, seals, whales, field mice, coyotes, bears, sheep and cougars.

The major mortality and welfare factors are varied—wanton shooting, collecting, poison from feeding on carcasses which have been poisoned, trapping accidents, starvation, and fire.

In many roosting and nesting areas the natural enclosure by brush and ruggedness has been eliminated by the development of roads and trails. Dynamiting and the noise of heavy machinery and trucks can seriously disturb condors at a long distance and contribute to their extinction, as also can oil developments, photographers, sickness and disease, eating foreign objects, lassoing, penning, killing for quills, Indians (among some tribes in Southern California there was and, possibly, there still is an annual mourning ceremony or feast at which a condor or other large bird was killed).

California law protects the condor as a non-game bird. A start toward federal protection was made in 1942 when the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere became effective. Thus, this large, rare, fascinating bird is hanging on to existence with remarkable tenacity.

Thirty-one amazing photographs in natural settings and 15 other illustrations add to the book's interest. The appendix records the occurrences of condors in California since 1835, tables and further descriptions. This descriptive report and summary is uncommonly interesting for all ornithologists and nature enthusiasts.

***The Ivory-Billed Woodpecker:* James T. Tanner; Dover Publications; 1942; 111 pages; paperbound; \$2.00.**

Editorial Note: Our San Diego Zoo does not have a specimen of the Ivory-bill, nor does any other zoo that they know of.

The Ivory-billed Woodpecker is the rarest North American bird, for at the present only 24 are in existence. Efforts to conserve and restore it must be of prompt application, as the factors undermining its survival continue to develop with increasing tempo. That the Ivory-bill shall not go the way of the Passenger Pigeon and the Great Auk is an objective of the National Audubon Society.

This specie, is a product of evolution to produce in our southeastern United States the noblest woodpecker of them all; one that has lured scores of recent ornithologists to the cypress jungles of South Carolina, Florida and Louisiana in the hope of seeing just one individual alive. It is worth whatever we must pay to preserve the species before it is too late.

The Ivory-bill is the largest North American woodpecker, averaging about 20 inches in length. The Southern Piliated, its cousin, is about 17 inches long, but it is a stockier bird.

The birds live in alluvial swamps, bottomlands, backwater regions, cypress or muck swamps or hummocks, or forests of sweet gum, bottomland red oak, laurel, cypress-tupelo and pine. The birds frequently nest in cypress trees, but only occasionally feed upon them.

Because the Ivory-bill seems to require a large quantity of certain borers, that sometimes fluctuate greatly in numbers, they may have to move a considerable distance to find an adequate supply. The Ivory-bill is well adapted to traveling for long distance. It is a strong flier with fast flight for a woodpecker. They usually travel in pairs. Where the chief obstacle to the establishment of a refuge is the high value of the timber, the author suggests a program of selective cutting whereby sound timber might be cut and sold leaving dead and dying trees to supply borers for the woodpeckers. The Ivory-bill must be granted complete protection from man.

The appendix covers nomenclature, related species, plumage, anatomy, measurements and a list of the scientific names of birds, mammals and reptiles mentioned in the text. Twenty photographs show adult and young specimens, nests and nesting sites, typical habitats and eggs, and 22 other illustrations and 17 tables provide additional background.

Calendar of Care

Down-to-Earth Gardening for October & November



by Dick Hull, Plantsman

WEBSTER describes a garden as; a piece of ground for the cultivation of herbs, plants, fruits, flowers or vegetables. 2. a rich, well-cultivated spot or tract of land. 3. a place for public enjoyment, planted with trees, flowers, etc., and often having displays of animal or plant life. He goes on to define a gardener as one who cares for a garden, who makes or works in a garden. With this in mind, let's take a look at what each of us consider our own garden.

One may find many varieties of gardens, from a collection of plants designed into a landscape, to the small family garden of our homes. The structures and plant groupings, the pathways, walks and fences, the use of stone and water;—all of these vary since each gardener provides his own personal expression. There are many lovely, quiet, private and intimate gardens, not seen, for they are hidden from eyes by a wall, fence, or hedge, and seldom shared with many visitors.

With the small lots common to housing tracts, the houses are placed so close together as to lose many acres of the natural landscape that used to separate homes. The eyesores of the

"black trunk" power pole, all have to be considered in planning the garden. What is the temperature range in your area? Do you want to plan a large patio for entertaining, or a small one for family use,—or both? Does the yard have room for yard games? How about a fireplace for summer evening dinners:—a swimming pool to cool off in and to keep the waistline slimmer? There was a time in the past when grandma's garden was a riot of color, with any and all mixtures of plants. Now, with more time being spent out of doors, we plan much closer to our family's needs. To sum up, the garden and what it means to you is an answer that each person holds within himself.

October and November start a busy time in the garden. We will be having both the hot dry winds from the desert and cooler nights, perhaps the first frost. Watering is still most important, and should be continued in a deep and regular schedule until the first heavy rains of fall. In early fall, water in the early part of the day if at all possible. The sudden drop in temperature of the soil, brought on by watering just before a cold evening, makes plants more prone to fungus

diseases, and tends to slow down root growth. Plants such as citrus and hibiscus should have less water and no fertilizer applied at this season. This prevents a new flush of growth and allows them to start "hardening off" before the early frost should arrive.

Bermuda grass lawns should be taken down to ½ inch in height, sowed with annual rye grass and given a good application of nitrogen fertilizer. This will help to prolong the color of the Bermudas and get the rye grass for the winter months' color off to a good start. If you are planning on putting in a new lawn, it is advisable to wait no longer. October is a very good month for this, as lower temperatures reduce the chance of heat injury. Most of our grasses prefer the 50° to 75° temperatures to grow well. If lawns are planted too late in the fall, slow or no growth will result and heavy rains can wash away the shallow-rooted seedlings.

Bulbs of narcissus, anemones, ranunculus, sparaxis, grape hyacinths, Dutch iris, watsonia and ixia can now be planted. Bonemeal, worked into the ground below the planting depth of the bulbs, will help to bring on a better growth. These bulbs, being planted

now, will establish a better root system while the soil is still warm. Tulip bulbs should be placed in the vegetable compartment of the refrigerator for 3 to 4 weeks;—the same with hyacinth bulbs. This gives these bulbs a chilling period that is needed to bring good bloom on tall stems, which can not be achieved otherwise in our mild winter coastal areas. A word of warning,—do not place these bulbs in the freezing compartment, as the cold there will destroy the bulbs' ability to grow.

Plants or seeds of snapdragons, stocks, calendulas, primula malacoides, sweet peas, Iceland poppies and violas should be planted to give color in late winter and early spring.

Bare root trees and shrubs will start arriving in the nurseries in late November and on into the winter months. Prepare the soil now for the future planting of these plants. The addition of manure, peat, sawdust or shavings, leaf mold and other humus to sandy or heavy soils, helps to keep the soil loose and more retentive of moisture. Nothing that one can do for a plant, has more far reaching effect upon it than correct planting. To neglect this most important part, will show up in the rest of the life of the plant. Pay close attention to the right location, the correct variety of plant for the climatic area and the ultimate size it will become, in choosing trees and shrubs.

There are many other jobs around the garden that should be done before winter really sets in. Don't be the one who finds himself at the first heavy rain in a raincoat rushing around to do today's tasks. Check to make sure that you have good drainage in the planted areas around the foundation of the house. With the rain running off the roof, the moisture accumulating there is great. The ground should be graded away from the house and into drain tiles or to the street drains. Leaves, dropping into the gutters during the summer and early fall, will clog water drainage. So gutters need inspection and cleaning out now. If you place fallen leaves in a compost bed to let them decompose, don't forget to put out snail and slug bait there.

The removal of fallen petals from early blooms and leaves from the ground around camellias and azaleas will help to prevent blight fungus that will cause difficulties next year.

As we have seen so much of our native plant life destroyed to the so-called progress of the bulldozer, we can all help to restore some of these

lost plantings by using them in a portion of the garden where they can be cared for by themselves. To drive in the country in the early spring and admire the shades of blue covering the hillsides by the native ceanothus is to want it growing nearby. And the California poppies with their yellow and gold colorings, following soon after, should be reproduced by plantings in every home garden. With good planning and the correct plants, these natives can be used wisely in the home garden or the canyon slope out back.

Fall planting causes native trees and shrubs to establish themselves faster than when set out in the spring, and to appear more vigorous. Do not purchase large plants of natives as they are more difficult to transplant and start than the smaller gallon or seedling size. Good drainage and moder-

ate watering is another important point to watch to attain success with natives. A list of native plants, and some of their uses may be found through your County Farm Advisor. The United States Department of Agriculture, with the co-operation of the University of California, has written several pamphlets on the native plants of California. The Natural History Museum under the series "Trails," has more information also. Some of these include "Native Trees of San Diego County;" "Plants of the Foothills and Mountains," and "Chaparral."

Addresses:

Agricultural Extension Service
5555 Overland, Bldg. 4, S.D. 92123
Natural History Museum
Balboa Park
P.O. Box 1390, S.D. 92112

PATRONIZE our ADVERTISERS

SHORELINE NURSERY

Top quality, variety and large stock of

TREES, FLOWERING SHRUBS, PERENNIALS

AND BEDDING PLANTS

Relax in our

SHADE PLANT HOUSE

Enjoy the hospitality of our

COFFEE BAR

Ask about our

LANDSCAPE AND MAINTENANCE SERVICE



955 First St. (Hwy. 101) Encinitas

Phone 753-1196

454-0404

CARLSON TRAVEL SERVICE, INC.

A TRAVEL-EXPERIENCED STAFF

7865 IVANHOE AVE.

LA JOLLA, CALIFORNIA 92037

P. O. BOX 1453



Roses

by John G. Farleigh

San Diego Rose Society

ONE OF the many advantages of living in San Diego is the length of the blooming season of our roses. By keeping the bushes healthy we can have color in the garden until pruning time in January.

During the remainder of the year we will try to gradually slow down the bushes to a state of dormancy and still provide all the necessities for their reduced activity.

We will continue to water right up to the rainy (we hope) season—but not as frequently when the days cool off. Perhaps every two weeks will be sufficient. Roses should not be allowed to dry out at any time. The last feeding will be in October, and will con-

sist of a low nitrogen fertilizer. Too much nitrogen this time of year may bring on new growth which will only have to be pruned off shortly. New growth this late in the year frequently fails to "harden-off." Hardening-off is a normal development of the canes; they become covered with a corky outer layer, and the leaf nodes, or bud-eyes, reach maturity. Immature canes re-

main green and pithy throughout the dormant season, they seldom develop any worthwhile bloom.

The spray program will continue. Aphids and mildew will not cause much concern, but rust, red spider mites and thrip must not be allowed to increase. They would gladly be the guest of your favorite rose all winter if you permit it. It's a good policy to spray the other plants in the vicinity of the rose garden also. Red spider mites and thrips enjoy a rather assorted diet. This summer we battled them in the citrus trees as well as the poinsettias.

Good grooming of the bushes is still very important. Keep the diseased leaves picked off and cleaned up. Instead of clipping the spent bloom we now remove the petals and leave the hip, or seed pod. In developing seed, the plant completes a blooming cycle and will tend to become dormant. Every living thing deserves a rest after a hard summer of work, so we forego some winter bloom for prospects of better performance next year.

Most gardeners, at least mentally, plan improvements in their gardens during the growing season—it seems only natural that our knowledge of the rose grows along with the bushes. So, why don't we take time out for some reflections, and while we're at it, examine the hindsight.

In addition to the problem of replacing the disease-prone and non-productive plants, a few good spots must be reserved for next year's all-American Rose Selections. While the garden is mentally dug up, let's correct any glaring mistakes in plantsmanship.

A rose should be planted in a location that fits its size and disposition. If you plant a big grandiflora like **BUCCANEER** or **QUEEN ELIZABETH** near a gate or walkway, by June you may find the access all but closed. Some

John Cole's ♣ ♣ ♣
Book & Craft Shop

7871 Ivanhoe Avenue
La Jolla California

454-4766

HORTICULTURAL BOOKS

FOR GROWERS
IN WARM REGIONS

Send for free list. Special attention given to orchids, bromeliads, succulents, palms, aroids, etc.

HORTICULTURAL BOOKS, INC.
Drawer 45
Stuart, Florida 33494

G. S. JOHNSON ROSE NURSERY

8606 GRAVES AVENUE, SANTEE, CALIFORNIA

Corner of Prospect, just east of new Freeway 67 bridge

Phone: 448-6972

ROSE SPECIALISTS

For 21 years

Roses Blooming In Cans

ALSO GENERAL NURSERY STOCK

CLOSED WEDNESDAYS



Commercial and Artistic

**PHOTOS
BY MACKINTOSH**

320 MOSS AVE., CHULA VISTA

422-4650

of the best bloom producers such as MONTEZUMA and TIFFANY will not perform well in shaded areas—given full, hot summer sun they are top performers in our yard. Like people, rose bushes do not always grow as predicted. The tall, the small and the sprawling should each be given consideration in planning next year's garden. Re-arranging the rose bushes to locations where they are best suited, improves the appearance of the garden as well as the performance of the individual rose. Established plants can be successfully transplanted during the dormant season. In fact, it is often beneficial to dig up a plant that refuses to grow or bloom—prune off the dead and damaged roots, prune the canes back to a good outside bud and replant it. This is known as the "kill-or-cure" treatment.

Careful consideration of growth habit may bring fresh new ideas in landscaping with roses. The hybrid-tea bush still reigns supreme as "Queen of Flowers" and there are many home gardens limited to this type of rose. However, if you like lots of bloom and have limited space you should consider a bed of floribunda roses. Some of these low-growing free-blooming bushes are especially vigorous and disease-resistant, and there are many varieties and colors. Our most trouble-free roses are a row of WINIFRED COULTER along the driveway. This is a red blend with a silvery white on the reverse side of the petals. They are seldom without a mass of bloom—even when bare of bloom, the waxy green foliage is very attractive.

Rose trees (the technical term is Standards) can be very striking in appearance along the sidewalk or driveway. They can be purchased in the hybrid-tea, floribunda or grandiflora types. Beware of the grandiflora standards, they become very top heavy. A compact hybrid-tea or floribunda variety would be our first choice. We are very partial to the CHRYSLER IMPERIAL, and for fragrance, it's still at the head of the class.

Grandifloras — these big, robust plants belong in every garden. Plant them where they can spread out and grow in every direction. Everyone should have a back fence upon which to trail a climber. A PEACE or MRS. SAM MCGREDY would be a splendid selection.

If you run short on space there's a whole new world of miniature roses to explore. You could end up with a yard full of roses. Now that's a real good idea!

PEOPLE WHO KNOW

Use

ARAGRO

10-5-5

Blended with Deodorized
Organic Fish Concentrate

ALL PURPOSE LIQUID FERTILIZER

For LAWNs—DICHONDRA
SHRUBS—FLOWERS
VEGETABLES—FRUITS

FULL BLOOM AHEAD

Use

ARAGRO

4-10-8

Blended with Deodorized
Organic Fish Concentrate

Specialty formulated for

LARGE FLOWERS
MORE FRUIT FLAVOR

WHEN NATURE NEEDS A HELPING HAND

—and She Usually Does

FEED YOUR
FUCHSIAS — AZALEAS
LAWNS — DICHONDRA
AND AFRICAN VIOLETS

ARAGRO FISH EMULSION



DAN MELSON'S COMPLETE LAWN & GARDENING SERVICE

Also

- New Lawns
- Roto-tilling
- Planting
- Orchard Tilling
- Tractor Work

Phone: 442-9028

SAN DIEGO'S LARGEST NURSERY FACILITY

... with complete, personalized attention to your every garden need.

*Presidio Nursery
and Florist*

LINDA VISTA RD. at MORENA BLVD.
PHONE 297-4216

Garnet Nursery

Open Daily — Free Delivery
30 Day Accounts on Approved Credit
488-3281

1530 Garnet Pacific Beach

CAROLYN BEAUTY SHOP

CALL 234-5344
121 W. Juniper—Just off First Ave. Bus
Convenient Parking

CULLIGAN

Soft Water

KEN WALKER

Serving La Jolla • Pacific Beach

COMMERCIAL & RESIDENTIAL
SALES • SERVICE
AUTOMATIC SOFTENERS
FILTERS

488-8373

970 TURQUOISE • PACIFIC BEACH

Dablias

by Larry Sisk

San Diego County Dahlia Society

WITH the year's shows now history, the dahlia hobbyist already is thinking of next year's gardens. As an exhibitor, what varieties should he have planted to have attained better success this year? What were those varieties on the show tables that got his eye? Which ones in his own garden were disappointing and failed to come up to expectations?

Notebooks already probably have notations "don't keep" and "don't grow again," along with similar notations on possible replacements.

It takes only one or two shows to teach the exhibitor that the way to win is to plant winning varieties. He will have noted that many of the top winners are the same that have been on

the Court of Honor repeatedly.

At the San Diego show, for example, KIDD'S CLIMAX again was the top winner among the large varieties, just as it has been since 1945. Other large top winners were DANNY, introduced in 1960; LULA PATTIE, 1960; AUTUMN BLAZE, 1948; ART LINKLETTER, 1957, and showing up with one blue ribbon, MRS. HESTER A. PAPE, 1946. The only new one winning more than one blue ribbon was the large white cactus, FRONTISPIECE, introduced last year.

On the medium (6 to 8 inches) tables, San Diego's own white formal STERLING SILVER, introduced last year, was the top winner with 10 blues. Runner-up, with eight blues, was the old favorite semi-cactus flame, GOLDEN

HEART, introduced in 1956. Other top winners included WINDBLASSIE, 1947; WAGSCHAL'S GOLDKRONE, 1956; LOUISE MCKELVEY, 1963; JUANITA, 1951, and the current world champion, FIRST LADY, 1955.

The popular one from 1946, MISS SAN DIEGO, started its comeback to be a feature of San Diego's 1969 anniversary. In addition to its special revival class, MISS SAN DIEGO was judges' winner in the society's Hall of Fame class for favorites of 10 years old or older. Another San Diego favorite, the majestic white cactus FLORENCE CHADWICK was among the winners as usual.

In the six-to-eight inch BB class, top winners included the ball, DOTIE D; the white ball, PAT N DEE; the formal PEACH BLEND, and the red cactus, DORIS DAY.

Leading miniature winners included PREFERENCE, LITTLE ROBERT, DECOY, GYPSY KISS and ROTHESAY SUPERB. Top poms included LITTLE WILLO, white; CZAR WILLO, purple; MASTER MICHAEL, orange; POM OF POMS, red; MOOR PLACE, dark red, and WISK, variegated lavender on white.

In addition to his planning for next year, the gardener of course still is caring for this year's plants, and trying to keep them growing until at least mid-November.

At this time of year the big problem is mildew, but new antidotes brought out in the last two years by the insecticide people are making the task of combatting it easier. For those gardens in which mildew has a good start, dusting with sulphur is recommended. Or, if the plants look as though they are beyond hope, cutting them back to about six inches above the ground will permit new growth to appear. General cleanup and removal of mildewed stalks and leaves will help the dahlia bed's appearance.

This is the ideal time to save dahlia seed. Just let the fading bloom stay on the plant until the petals fall and a drying seed pod remains. Almost all the flowers at this time of year will have open centers at blooming or soon after, making them good targets for the bees.

More gardeners are having fun raising their own new varieties from seed, and with the practice being contagious, even more will be saving seed to plant next spring.

This is the time for patience also. The dahlia grower should continue to water and keep down the weeds until late November, and unless there is unexpected wet weather, to refrain from digging the roots until late December.

MISSION HILLS NURSERY

Large stock of Camellias and Azaleas

Since 1924

We Give S&H Green Stamps

Phone 295-2808

1525 Fort Stockton Drive

San Diego 92103

PACIFIC CAMERA

PHOTOGRAPHIC SUPPLIES

PHIL ACKER, Owner

930 PROSPECT STREET, LA JOLLA, CALIFORNIA — PHONE 459-3444

• LOAMITE

The Soil Amendment specified by professional gardeners and commercial growers

and **MILORGANITE** •

The only true Organic Fertilizer that supplies the humus and necessary nutrients for San Diego soils.

Camellias

by Lucien C. Atherton

San Diego Camellia Society

SEPTEMBER and early fall brings an anticipation for the forthcoming camellia blooming season. Already, some of the early varieties, such as **SEPTEMBER MORN**, **DAIK-AGURA**, **VEDRINE** and others, are showing color. We await the results of early gibbing, and look forward to the renewal of old camellia acquaintances and to the new friends who will be joining the San Diego Camellia Society.

It is also a good time to inspect your plants and check on things left undone during the summer. What you do now, will pay dividends during the blooming season. A camellia plant not in bloom is often neglected during the summer, or its needs are postponed due to vacations and other seasonal activities.

Adequate watering is most important. Light sprinkling will not do the job. Camellias need excellent drainage and if you have met this requirement, water deep and keep your plants moist. A plant completely dried out cannot be saved. Insufficient water is often the major cause of bud drop, because this is an important time in bud development.

Wash the foliage thoroughly, so the plant can breathe. This washing will also destroy the breeding places of pests and disease. It will brighten the garden. Check your mulch and replace it if rotted or if pests or fungus are suspected. Mulch will keep the surface roots cool and moist. Firbark or redwood shavings constitute a good and lasting mulch. A light fall feeding, during early September, will encourage good bud development. However, it is better not to fertilize, than to use too much, because heavy new growth must not be induced during the fall if you want good blooms next winter.

Disbudding now will give you better

quality blooms. How much you disbud is a personal matter. It is also a good time to gib, using Gibberellic Acid, to induce better and earlier blooms. The best time to prune is after the blooming season, but it is never too late to prune. Check your plants for weak inside branches, which will not pro-

duce good blooms and which often harbor pests such as scale. These weak branches consume as much food as the healthy ones. Remove the dead wood and these branches.

Spray your plants with the necessary fungicides and insecticides. Use insecticide with caution, and follow the directions. Better too weak than too strong. It is a good time to clean up the pests neglected during the summer, before there are blooms to damage. Malathion, chlordane, and sulphur will control most of your pest problems.

It is not wise to transplant camellias during the fall, except when necessary to save the plant. However, this is a good time to mark the plants to be moved during the blooming season, which is their dormant season also. Do a few of these things and your camellias will reward you next winter. The camellia is a hardy plant, if you don't neglect or abuse it. Check your camellias now. Let them know that you are still with them.

DE FRANCE'S CAMELLIA NURSERY

GROWERS OF OVER 300 RARE AND COMMON VARIETIES

1425 Rubenstein Ave., Encinitas Phone 753-5200

FOR BETTER GARDENS IN 1966, USE

COUNTRY SQUIRE CAMELLIA FOOD

6-10-8 formula, fortified with chelated Iron and Zinc.
Rich fish concentrate. Contains NO CHLORIDE SALTS
A PLUS VALUE camellias will thrive on.

COUNTRY SQUIRE ROSE FOOD

8-8-8 formula is THE fertilizer that has
been tested and approved by
THE SAN DIEGO ROSE SOCIETY
Accept no substitute — there is nothing like it
for big breath-taking blooms.

For Better Returns, With Less Effort

See your NURSEYMAN NOW

Use COUNTRY SQUIRE FERTILIZERS

BEST FOR YOUR WHOLE BLOOMIN' GARDEN!

Made in San Diego

Irises

by Betty Springer Van Dusen

San Diego - Imperial Counties Iris Society

IRIS rhizomes that were set out in the summer are now looking like plants rather than just fans. Older clumps have put out new increases all around and begun their growth toward the large clumps they will be in the spring. One of the most common practices among iris growers is to give a feeding of super phosphate or perhaps a 5-10-10 or 10-10-10 formula, about November to promote growth and vigor. If you had trouble with your irises rotting last winter due to the excessively heavy rains you might like to give them an application or agricultural gypsum this fall, in case the same situation arises again. A handful sprinkled into each clump might be of help if this should occur. While gypsum is not a fertilizer, it is something that irises seem to like particularly, and certainly it is good for loosening heavy soil and preventing rot.

One of the most important things to keep in mind when planting *Spurias* this month is their permanency. Plan accordingly for ample working of the soil with quantities of manure and organic matter and for wide spacing

to allow for their vigorous growth. Four feet apart is generally recommended, as they resent being disturbed for a number of years. A location that receives as much sunshine as possible will insure abundance of bloom. They can be planted deeper than the tall bearded irises, with the tops of the rhizomes about two inches below the surface of the ground. It is most essential that the rhizomes be kept moist at all times both before and after planting and until they become established. They do grow best with daily heavy watering through the winter and spring months, too.

The interesting little iris species, *I. stylosa*, that is so commonly grown because it blooms in the winter, giving us the first hint of spring, has small lavender flowers on such short stems that they are almost hidden by the tall grass-like leaves. It's often been said, "What a dear little iris, but it's so hard to see!" Perhaps if those who are distressed by this fact would try cutting back the long leaves this fall the flowers would come out on a par with the new leaf growth.

This is a good time of year to put some special thought into reblooming irises and one of the best ways to do this is to visit the Second Annual Reblooming Iris Show to be held in the Floral Association Building, Balboa Park, on November 20th. The show this year promises to be bigger and better than last year. It has been proven that such a show is not only possible, but highly successful in our area, providing a fine opportunity for discoveries and comparisons of varieties. This show is significant, for nowhere else in the world can there be found such an extensive assemblage of irises at this season. The San Diego-Imperial Iris Society welcome iris entries from any one wishing to exhibit at this show, so bring in a specimen stalk and help to make this show an overwhelming success. The American Iris Society rules require that each specimen be identified with its correct varietal name.

Interest in varieties that rebloom is advancing at a rapid rate with the improvement of other qualities than the reblooming factor. Quite a few rebloomers have now been developed that rank in quality with the spring blooming varieties and many can be found at reasonable prices. The irises that rebloom for us in California are far different from those developed especially for colder climates where emphasis must be placed on hardiness. Unfortunately, some of the most reliable repeat performers have poor flowers in substance, size, color and form. The only redeeming feature being that they are in bloom at a time of year when spring seems so far away. This welcome sight keeps them in the garden when they would surely be eliminated if they had to stand comparison with the high quality of spring blooming varieties. The midwesterner may glory in these hardy rebloomers that he may coax into another bloom before the winter freeze sets in. But the Southern Californian is more apt to experience an unending series of bloomstalks perhaps from unexpected varieties that he didn't even know had a reblooming tendency.

In the coastal areas where climatic changes are never extreme, many varieties tend to rebloom that are not generally recognized as rebloomers at all. With lots of sun, water and food they apparently can't resist showing their pleasure at being given the opportunity to "winter" in California. The greatest mass of bloom can be expected in April and May with a continuous showing here and there throughout the

LA MESA NURSERY

"Everything For The Garden"

Now!

Fall bulbs in
rainbow colors

Lawnmowers
and other
appliances

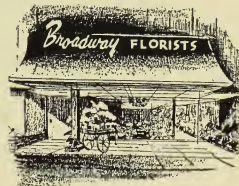
Dramatize the garden.

Nightscape with 12 volt garden lighting.

Bankamericard Delivery

S & H Stamps

8480 La Mesa Blvd. — 466-5703



Alice and Allan Zukor

Validated Customer Parking at Rear of Store
733 Broadway 239-1228

CURTIS COLEMAN CO. REALTORS

SINCE 1913

SALES

LEASES

REAL ESTATE LOANS

PROPERTY MANAGEMENT

Suite 2100, United States National Bank Bldg.
Centre City, San Diego 1, Calif. 233-6557

garden from summer through to fall and winter and into very early spring. If it could be said that there was a time when more irises were in bloom than at any other off-season time, it would probably be the month of November. The gold, brown, orange, and bronze shades so favored for flower arrangements are especially welcome in the fall. Some varieties will honor all seasons with their blossoms, taking only short rest periods between.

Some gardeners prefer to group their rebloomers in one area making it easier to give extra water and fertilizer to just those who need it and perhaps enabling them to make a better showing by concentrating the color mass. The amount of sunshine available seems to be the greatest factor in promoting rebloom. Even next door neighbors, who seemingly garden under identical conditions, may have widely differing results when it comes to the amount of off-season bloom, the only apparent difference being that one has extensive shade which deters repeat bloom.

To devote our gardens to reblooming varieties exclusively would be a great mistake because to do so would be to deprive ourselves of the very finest varieties that may bloom just once a year, but are certainly worth the long wait. If irises bloomed as commonly as some other flowers here in California, then the impact of the freshness and perfection of the individual variety would be lost, becoming virtually unnoticed in the landscape. The iris enthusiasts here are double blessed because the old complaint that "Iris bloom for such a short time!" no longer holds true and they can, with careful selection and a little bit of extra care, have irises blooming the year round. Surely this little bit of extra effort is compensated for when a sudden glimpse of vivid color through a dreary window draws you out into the winter rain because . . . "There's an IRIS out there!" Surprise is the fun of it!

Walter Andersen Nursery

LARGEST SELECTION
LANDSCAPE MATERIALS

Nursery Stock and Garden Supplies
for Beautiful Gardens

We Specialize in Indoor Plants

3860 Rosecrans San Diego 10

Phone 296-6251

Orchids

by Byron H. Geer

San Diego County Orchid Society

THE TANG that is in the air these days heralds the beginning of Fall and the near approach of Winter. It's an exciting time for Orchid growers, since the Cymbidium season is with us and the midwinter Cattleyas will be coming along soon. The summer watering and feeding should be paying off shortly and we will know whether or not the care given the Orchids for the last few months was to their liking. The job isn't finished yet, however, for there are a few minor things yet to be done.

The Cymbidiums want continuous feeding all through the blooming season, and if you have not yet switched your food formula over to a high phosphorus, run to your nearest nursery and pick up some Hi-Bloom. The rule of thumb on blooming size Cymbidium plants is high nitrogen for six months of the year and high phosphorus during the other six months. The optimum time to make the change is mid-August or the first of September, but it's still not too late. We are all out hunting for bloom spikes every time we get a spare moment, and when found, they should be marked so that we can keep an eagle eye on their development. It is a good idea to put a small but sturdy stake next to each spike so that it may be trained up out of the foliage as it grows along. Too often untrained spikes get lost in the shuffle, and are allowed to bloom down under the leaves. When this happens the flowers are usually faced every which way and the spike itself is curled or distorted. A spike of this sort can be very effective in a flower arrangement, but in general they turn out to be problem children. Then too, bloom spikes frequently fall over and snap off from their own weight and this means lost or damaged flowers. A simple stake and two minutes off the

busy schedule seems little enough to pay for insurance against this possibility.

If you have followed a consistent spray program there will be no worry about red spider and thrip, but the one garden pest that will travel for miles to a Cymbidium in blossom is the slug. Bait them before the damage is done and relax. Please, NO ARSENIC in the bait. It is hard enough on kids and pets, but it is sure death on Orchid roots. There are half a dozen preparations on the market that seem to do the job without arsenic, so why take chances?

The greenhouse Orchids need some attention too. Shorter, darker days are here, and they cut down the light available for the indoor plants. Overhead glass should be hosed off to remove the accumulated dust and grime of the summer. Whitewash or shading can be taken off completely by mid-October, but be sure to keep humidity high on the occasional hot bright days. Check the watering schedule too, and cut back on the pot watering if the plants don't need it. A little on the dry side seems to be the best approach as this hardens off the new growth. Make a test run on the heating system to be sure that it is in working order. This should include thermostats, valves, pumps and all the other gadgets that have to function properly in unison to keep the heat level adequate.

These next few months are the most satisfactory part of the year for the Orchid grower. It is the season we look forward to with hope that the seedlings bought some time ago will give out with that spectacular flower. An eye-stopper perhaps, an award-winner perhaps; even if it turns out to be an ordinary, everyday, run-of-the-mill bloom . . . it's our own ugly child, and we love it.

Bromeliads

by Mrs. Cleoves Hardin

President, San Diego Bromeliad Society

TILLANDSIA—the largest family of the Bromeliads—and probably the most intriguing of all is a group that everyone should enjoy. Tillandsias can be grown by anyone whether experienced in plant growing or just an individual that responds to the unique. In this widespread genus, we find numerous forms to suit the purpose of the collector. From the beautifully hung drapes of Tillandsia *usneoides* that grace the trees of our own southern states and is found well into Argentina, to the very large, heavy and stiff looking Tillandsia *grandis* with its flower stem that reaches a height well above a tall man, there is a size and shape for all occasions.

The so-called Spanish moss that so many people think of as a parasite but definitely is not, can be one of the most useful of all Tillandsias. *T. usneoides* can be grown as a backdrop on a wall where one would like to display other epiphytes such as orchids and ferns. It can be used to decorate the South Seas carvings that are so popular and it is a must when arrang-

ing other Bromeliads on a tree or mobile. *T. usneoides'* sister, *T. recurvata*, is a desirable one to wrap around the roots or "fixits" used to anchor other Bromeliads to limbs. It soon goes completely around hence its common name, Ball Moss. These two also are grown for their own merits as well as their utility aspect. *T. usneoides* has a small chartreuse flower that is fragrant at night and *T. recurvata* puts up a tall, slender stem with open flowers in the same greenish shade.

For those who like to mount plants, there are many in this category. Almost all of them have free air circulation around the roots. The leaves are equipped with small plate scales that act just like sponges to absorb from the air all the necessary moisture and minerals that the plant needs for survival.

Probably the most commonly seen variety is the *T. lindenii* and its cousins and crosses. When seeing these for the first time, one is apt to think of the Vriesia "Flaming Sword" and confuse the families. *T. lindenii*, *T.*

cyanea and *X. Emilie* are so very similar that it really is necessary to have only one in a collection. The chief difference is in the length and thickness of the bract. The bract is bright pink with brilliant purple flowers. These are the most difficult to grow if any can be said to be difficult.

The bulbous varieties such as *Caput-Medusa*, *bulbosa*, *butzii* and *balbisiana* are among the most fascinating species of the plant world. When they are mounted on a flat piece of bark so that the entire plant may be seen and hung low with a hanger so that one can look down into the twisted and sometimes brightly colored center of the plant, one sometimes wonders what freak of nature created that peculiar plant.

Among the smallest varieties is *T. ionantha*. It is a perfectly shaped urn that forms a colony quickly, and when grown in the sun the center looks as though an artist touched it with vermilion. The long, tubular flowers come from the red center with a stamen twice the length of the flower and of a brilliant yellow which makes quite a picture in miniature. *T. ionantha* is probably the easiest one to grow.

For an arrangement where one needs a graceful clump of grasslike foliage, dark and shiny green, with flowers of the most iridescent purple, there are several to choose from: *T. filifolia*, *T. juncea*, and *T. tricolor* var. *melanocrater* or the so-called Christmas Tillandsia, are good subjects to consider.

Among the silver-gray varieties, probably the most pleasing variety would be *T. plumosa*. The plumed, thread-like leaves of soft gray are most like the gossamer material of butterfly wings. The violet flower is just an added bonus to the beauty that is radiated by the clumps of *T. plumosa*. *T. schiedeana* is an informal rosette with narrow, powdery leaves with red bracts and yellow flowers. *T. streptophylla* is one of the grays that just can't be described properly. It is a very dense rosette with long tapering leaves growing in a pyramid to about one foot in height with the end of the leaves very tightly coiled and the flower stem standing another 12 to 18 inches above and branched with a width of 12 inches. This is one of the most expensive and the hardest to find but one well worth searching for.

Of all of the intriguing varieties to be found on the market, it is difficult to recommend just one or two. Seeing is believing in the unique genera of the plant world. Tillandsia the airy fairy plant.

TIME FOR
Shade tree
SPRAYING
call
281-6910
ANJO
PEST CONTROL
4358 POPLAR ST. SAN DIEGO, CALIF.



FEB.
MAR.
APRIL
MAY

AUG.
SEPT.
OCT.
NOV.

POWER EQUIPMENT

PROFESSIONAL STATE LICENSED OPERATORS

Fuchsias

by Morrison W. Doty

San Diego Fuchsia Society

AUTUMN, with its variations from dreamy Indian Summer days to cold foggy nights, can be a delightful distillation of all the other seasons of the year. In Southern California those elements of climate extending far into the Winter, enable us to enjoy our Fuchsias long after growers in the colder climates have "put their gardens to bed." Since Fuchsias (properly fed and cared for) normally bloom, rest, and bloom again several times, sometimes almost to exhaustion, we must use good judgment at this time of year, to ensure good plants for next Spring. Older, tired, bloomed-out plants should have their food and water reduced to a safe minimum to induce dormancy that they need to survive.

This is especially true of container plants. They should have any drastic pruning they need postponed until Spring unless you are following the current trend toward Fall pruning. Cutting back of long straggly branches, as well as some discreet pruning and shaping of all plants from August into October, has proven a good practice in this area. Some growers and even nurseries we know prefer Fall pruning while the sap is down, as safer from frost and dieback. Some detailed directions for pruning different Fuchsia types were given again in the August-September issue.

In the milder areas here it is a real pleasure to have favorite varieties blooming beautifully up to Thanksgiving and Christmas. Selected young vigorous plants, after being fed for bloom on a hi-phosphorous formula, may easily be led to late blooming. Such old hardies as ROSE OF CASTILLE and GARTENMEISTER BONNSTEIT or the English STORM KING, and some new varieties as ENCHANTED, RED JACKET or INTERLUDE are suggested for late bloom. Baskets, or container plants that may be moved about to the warmer protected winter nooks,

are best for this experiment. Baskets at eye-level height are more easily fed, watered, and it is easier to replenish the soil washed away by deep watering.

During the July and August hot weather, many Fuchsia fans complained about losing basket and container plants. Some had been trying out strange or unfamiliar plant mixes or fertilizers, but more often there was evidence of irregular or insufficient watering. Letting container Fuchsias get too dry can be as dangerous as for Ferns, and enough good soil, moisture-holding leaf-mold and other nutrients must be kept in the basket to protect the plants against occasional neglect in watering. Many successful gardeners still prefer the basic simple soil, manure, and good leafmold mixtures, rather than expensive specials for each flower. It is easy to add a little blood meal and hi-nitrogen fertilizer such as fish-base 10-5-5 at growing time, and change to a low nitrogen, hi-phosphate feeding formula like 4-10-8 three or four weeks before blooming, when the plants are well grown. Good rich natural leaf mold is preferred to peat or other commercial moisture-holders which may be ruined by once drying out. Normally a very adaptable hearty feeder in most slightly acid soils, the Fuchsia can be a delight to the amateur or casual gardener.

When doing Fall pruning, save three-inch tip cuttings from your favorite varieties of this easiest of all plants to propagate. Press them down firmly in a flat of moist sand with a bit of fine leaf mold added, and place in a filtered, sunlit protected nook. They should be ready for 2-inch pots in three weeks or so, for they can be rooted even in plain water. Use no fertilizer at first.

Exchanging cuttings with garden friends, shopping for some of the striking new varieties, and joining a Fuchsia Society will add zest to your enjoyment of this most worthwhile hobby.

Hold-A-Hill

Pat. No. 2960-797

"FOR LANDSCAPING BEAUTY"

Takes the place of a retaining wall for half the cost



Interlocking Block

Stops Erosion

Do it Yourself or we install

— FREE ESTIMATES —

100% FINANCING

HOLD-A-HILL BLOC CO.

3239 1/2 Bancroft Drive
Spring Valley, California
Phone 463-6344

7580 Hillside Drive

Overlooking La Jolla Shores, just up the hill from Torrey Pines Road, or down the hill from Mt. Soledad, is **HILLSIDE NURSERY**. Whichever approach you take, you'll find a WONDERLAND OF PLANTS — rare Begonias, Philodendrons, Tropicals, fine House Plants — a wide variety of well grown nursery stock.

Corey Hogewoning, Prop.

San Diego Botanical-Garden Foundation, Inc.

by Penny Bunker

ARE YOU A CHARTER MEMBER?

IT STILL IS NOT too late.

Charter Memberships in the San Diego Botanical-Garden Foundation, Inc. will close December 31, 1966. Are you registered? To be a charter member means you have the honor of being listed among those interested and privileged individuals and groups giving their support to the establishment and development of this horticultural center.

Through the efforts of many floral and garden interested people, The San Diego Botanical-Garden Foundation, Inc. has been organized to acquire, build, and develop a horticultural center in San Diego and to encourage more extensive floriculture and use of landscape design using ornamental plants and trees. It was incorporated July 23, 1965 in order to legally acquire by gifts, bequests, or grants, monies and property to develop and maintain the purposes of the organization.

The 1966 Board of Trustees was elected in July at the annual meeting. On September 8th, 1966—New officers of the organization were elected by these trustees. The new officers are;—President—Virgil H. Schade
1st Vice-Pres.—Samuel W. Hamill
2nd Vice-Pres.—Roland S. Hoyt
Secretary—Mrs. Joseph J. Kenneally
Rec. Sec.—Mrs. William Betts, Jr.
Treasurer—Mr. Stanley W. Miller

A resolution endorsing the proposed acquisition for a State Park of the Hosp Grove and Buena Vista Lagoon, was passed by the Board of Trustees.

An educational program under the guidance of Robert Lamp is being sponsored from October through May.

Charter memberships are still open to all individuals and organizations interested in the purpose of the San Diego Botanical-Garden Foundation. NOW IS THE TIME TO SIGN UP.



200th Birthday Floral Committee Organizes

by Joan Betts

THE Floral Committee of the 200th Anniversary Celebration of San Diego held their first meeting Wednesday, September 21st in the San Diego Floral Association Building.

Representatives of Garden Clubs, Floral Associations, Grower Associations, interested community-minded citizens and the Press were in attendance.

Plans are now in the making to bring into reality a floral program that will help focus attention on our city's 200th Anniversary Celebration.

Mr. Tom Ham, President of the 200th Anniversary Board, gave an enthusiastic outline of the progress and plans of the overall celebration. He outlined the different activities planned throughout the year of 1969.

He asked all of those present to pledge their support and to participate in a worth while and memorable year—that will soon be here. He further stated that our city will attract State and National recognition and he emphasized the distinctive role of the Floral Committee. He outlined the importance of having continuous displays of seasonal flowers and plants in key locations in the greater San Diego area.

The Floral Committee co-chairmen, Joan Betts and Alice Zukor discussed the purpose in meeting that evening, and announced The Flower Basket of the Nation theme, with emphasis

on having an approved annual calendar of blooming flowers and plants. Two major flower festivals, one in May and one in June 1969 were also discussed.

As soon as the flower and plant calendar is finalized, it is hoped that it will be coordinated with Nursery sales through the use of news media, offering advice to home owners on the planting and care of these flowers and plants, for the home gardener.

Also discussed were key locations where well-maintained floral displays, co-ordinated with the flower and plant calendar, should be on exhibit.

This was the beginning of our plans. A discussion period was held on the best way to reach our goals and carry out the Flower Basket of the Nation theme in as many varied ways as possible.

This committee would like to hear from the readers of CALIFORNIA GARDEN magazine any suggestions that would help enhance our city's floral program. Please write today to Joan Betts or Alice Zukor at the post office box listed below.

Signed: Joan Betts,
Chairman of the Floral Committee
San Diego 200th Anniversary
Celebration, P.O. Box 6031
San Diego, California 92106
Alice Zukor, Co-Chairman
733 Broadway
San Diego, California 92101

SAN DIEGO FLORAL ASSOCIATION

FLORAL BUILDING, BALBOA PARK

(Under the sponsorship of
The Park and Recreation Dept., City of San Diego)
Third Tuesday, Floral Building, 8 p.m.
Pres.: Mrs. Emmett W. Fowler, Jr.
1025 Havenhurst Dr., La Jolla 92037 454-1795

FLOWER ARRANGERS' GUILD OF SAN DIEGO

First Thursday, Floral Building, 7:30 p.m.
Pres.: Mrs. Edwin Gould
7065 Neptune Pl., L.J. 92037 454-5119

AFFILIATE MEMBERS 1966

ALFRED D. ROBINSON BEGONIA SOCIETY

Third Friday, Homes of Members, 10 a.m.
Pres.: Miss Myrtle Patherston
4310 Piedmont Dr., S.D. 92107 224-1572
Rep. Dir.: Mrs. Anita Lynch
202 Lewis, S.D. 92103 298-1400

CIVIC CENTER GARDEN CLUB

Meets every Thursday, 12m to 1 p.m.
Garden House, Grape and 101 Civic Center
Pres.: James Saraceno
3346 Lloyd St., S.D. 92117 274-2628
Rep.: Mrs. Donald A. Innis
1827 Puterbaugh, S.D. 92103 298-6513

GENERAL DYNAMICS GARDEN CLUB

First Wednesday, Floral Building, 7:30 p.m.
Pres.: Robert Bradshaw
9554 Candy Lane, La Mesa 92040 466-4877
Rep.: Dr. J. E. Henderson
3503 Yosemite, S.D. 92107 274-1754

MEN'S GARDEN CLUB OF SAN DIEGO CO.

Fourth Monday, Floral Bldg., 7:30 p.m.
Pres.: John G. Farleigh
2217 Whitman St., S.D. 92103 295-5404
Rep.: Dr. J. W. Trowell
4950 Canterbury Drive, S.D. 92116 282-9131

ORGANIC GARDENING CLUB

Third Friday, Floral Building, 7:30 p.m.
Pres.: Ferd L. Thibault
4511 Mt. Gaywas Dr., S.D. 92117 277-6899
Rep.: Miss Mary Panek
4680 Del Monte Ave., S.D. 92107 222-5013

POINT LOMA GARDEN CLUB

First Friday, Floral Bldg., 10 a.m.
Pres.: Mrs. Philip Hardie
3756 Kingdley, S.D. 92106 223-9720
Rep.: Mrs. Louis J. Kulot
2732 Azalea Dr., S.D. 92106 222-5480

SAN DIEGO BONSAI SOCIETY, INC.

Second Sunday, Floral Bldg., 1-5 p.m.
Pres.: George Fujimoto
1962 Euclid Ave., S.D. 92105 264-1477
Rep.: J. F. Parrish
5628 Del Cerro Ave., S.D. 92120 583-1460

SAN DIEGO CACTUS & SUCULENT SOCIETY

First Saturday, Floral Building, 2 p.m.
Pres.: Reuben V. Vaughan
1041 Le Roy St., S.D. 92106 223-2629
Rep.: Jack Ward
823 Halecrest St., Chula Vista 92010 400-5513

SAN DIEGO CAMELLIA SOCIETY

Second Friday, Floral Building, 7:30 p.m.
Pres.: Mr. Ray Greer
3756 Kenwood Dr., Spring Valley 92077 469-8970
Rep.: Mrs. Lester Greenwood
3130 Second St., S.D. 92103 295-5871

S.D. CHAPTER CALIF. ASS'N NURSERYMEN

Second and Fourth Thursday, 7:30 p.m.
Pres.: John Basney
4731 Conrad Ave., S.D. 92117 273-4636
Rep.: John Basney
4731 Conrad Ave., S.D. 92117 273-4636

SAN DIEGO COUNTY DAHLIA SOCIETY

Fourth Tuesday, Floral Building, 7:30 p.m.
Pres.: Henry Boyd
6581 Broadway, S.D. 92114 264-1283
Rep.: Mrs. R. M. Middleton
3944 Centre St., S.D. 92103 296-3246

SD-IMPERIAL COUNTIES IRIS SOCIETY

Meets 3rd Sunday, Floral Bldg., 2:30 p.m.
Pres.: Arthur B. Day
279 J St., Chula Vista 92010 422-5172
Rep.: Mrs. N. R. Carrington
6261 Buiston St., S.D. 92122 453-3383

SAN DIEGO COUNTY ORCHID SOCIETY

First Tuesday, Floral Building, 8 p.m.
Pres.: Ralph Amelele
3160 Chicago St., S.D. 92117 273-1084
Rep.: Byron H. Greer
3073 Talbot St., S.D. 92106 222-2044

SAN DIEGO FUCHSIA SOCIETY

Second Monday, Floral Building, 8 p.m.
Pres.: James Watson
3811 1/2 Third Ave., S.D. 92103 295-0963
Rep.: Mrs. Eugene Cooper
4444 Arista Dr., S.D. 92103 295-7938

SAN DIEGO ROSE SOCIETY

Third Monday, Floral Building, 8 p.m.
Pres.: Mrs. James R. Buman
4651 Mt. Alifan Dr., S.D. 92111 277-4872
Rep.: Mrs. Felix White
5282 Imperial Ave., S.D. 92114 264-4440

SOUTHWESTERN GROUP, JUDGES' COUNCIL CALIFORNIA GARDEN CLUBS, INC.

First Wednesday, Floral Building, 10:30 a.m.
Pres.: Mrs. Harry K. Ford
4851 Lorraine Dr., S.D. 92115 583-4320
Rep.: Mrs. Roland S. Hoyt
2271 Ft. Stockton Dr., S.D. 92103 296-2757

OTHER GARDEN CLUBS

AMERICAN BEGONIA SOCIETY

San Diego Branch
Fourth Monday, Barbour Hall, University & Pershing, 8 p.m.
Pres.: Mrs. Eugene Cooper
4444 Arista Dr., S.D. 92103 295-7938
San Miguel Branch
First Wednesday, Youth Center, Lemon Grove 7:30 p.m.
Pres.: Mrs. J. W. Lowry
7425 Roosevelt, Lemon Grove 92055 463-4762

BERNARDO BEAUTIFUL & GARDEN CLUB

First Wednesday, 1:30 Seven Oaks Community Center, Bernardo Oaks Dr., Rancho Bernardo
Pres.: Fred W. Walters
12048 Callado Dr., S.D. 92128 748-1486

CARLSBAD GARDEN CLUB

First Friday, VFW Hall, Carlsbad, 1:30 p.m.
Pres.: Mrs. Wanda Bond
VFW Hall, Pico & Oak St., Carlsbad 92008 274-2628

CHULA VISTA FUCHSIA SOCIETY

Second Tuesday, Norman Park Recreation Center, 7:30 p.m.
Pres.: Mr. August H. Goerke
481 Flower, Chula Vista 92110 402-3930

CHULA VISTA GARDEN CLUB

Meets 3rd Wednesday 1:00 p.m.
C.V. Women's Club Bldg., 357 G St., C.V.
Pres.: Mrs. M. D. Holmes
68 E. Sierra Way, C.V. 92010 422-0490

CLAIREMONT GARDEN CLUB

Meets Third Tuesday, 9:30 a.m.
Pres.: Mrs. Stanley Fletcher
3090 Chicago St., S.D. 92117 276-2520

CORONADO FLORAL ASSOCIATION

Meets 1st Tuesday, Red Cross Bldg., 1113 Adella Lane
Pres.: Capt. Richard W. Parker, U.S.N. Retired
508 Gibraltar Blvd., Coronado 92118 435-6454

CROSS-TOWN GARDEN CLUB

Third Monday, Barbour Hall, University & Pershing, 8 p.m.
Pres.: Charles Williams
4240 46th, S.D. 92115 284-2317

CROWN GARDEN CLUB OF CORONADO

Fourth Thursday, Red Cross Bldg., 1113 Adella Lane, 9:30 a.m.
Pres.: Mrs. Harold R. Superko
421 Ocean, Coronado 92118 435-9366

DELICADIA GARDEN CLUB

First Wednesday, Encinitas Union Elementary School, 7:30 p.m.
Pres.: Mrs. I. F. Nichols
159 Diana, Leucadia 92046 753-5409

DOS VALLES GARDEN CLUB (PAUMA VLY.)

Meets 2nd Tuesday, Pauma Valley Center 1:30
Pres.: Mrs. William C. Myers
Country Club Dr., Pauma Valley 92061 742-3325

ESCONDIDO GARDEN CLUB

3rd Friday, Veterans Memorial Hall 1:00 p.m.
Pres.: Mrs. Victor F. Forrester
Reidy Canyon Rd., Escondido 92025 745-9657

FALLBROOK GARDEN CLUB

Lath Thursday, Fallbrook Woman's Clubhouse, 1:30 p.m.
Pres.: Mrs. Roman E. Shore
1211 Pepper Tree Lane, Fallbrook 92028 728-7044

GROSSMONT GARDEN CLUB

Second Monday, La Mesa Chamber of Commerce Bldg., University Ave., La Mesa 92041
Pres.: Mrs. Raymond Moore
4677 Harrison Ave., La Mesa 92041 466-6943

IMPERIAL BEACH GARDEN CLUB

3rd Tuesday, Imperial Beach Civic Center, 1:30 p.m.
Pres.: Mrs. Alice Loomis
744 Fourth, Imperial Beach 92032 424-7235

LAKESIDE GARDEN CLUB

2nd Monday, Lakeside Farm School, 7:30 p.m.
Pres.: Mrs. Louis Griffin
12024 Lakeside Ave., Lakeside 92040 448-4199

LA MESA WOMAN'S CLUB (Garden Sec.)

3rd Thursday, La Mesa Women's Club, 1:00 p.m.
Pres.: Mrs. J. Wells Hershey
1928 Orchard Road, Lakeside 92040 448-6376

LEMON GROVE WOMAN'S CLUB

(Garden Section)
First Tuesday, Lemon Grove Woman's Club House, 1 p.m.
Pres.: Mrs. James H. Sharp
9124 Alton Dr., Lemon Grove 92045 466-8300

MISSION GARDEN CLUB

Meets First Monday, 8 p.m.
Barbour Hall, Pershing and University
Pres.: Gladys L. Gill
4828 3rd St., S.D. 92116 283-2898
Rep.: Julie Bone
3145 No. Mt. View Dr., S.D. 92116 282-7422

NATIONAL CITY GARDEN CLUB

Third Wednesday, National City Community Bldg., 7:30 p.m.
Pres.: Ray W. Daniels
2462 Tuberosa St., S.D. 92005 282-0370

NORTH COUNTY SHADE PLANT CLUB

Second Sat., 1:00 p.m., Seacoast Hall, Encinitas
Pres.: H. Marshall Chadwell
R. I. Box 832, Del Mar 92014 755-9219

O. C. IT GROW GARDEN CLUB

Second Wednesday, S. Oceanic School Auditorium, 7:30 p.m.
Pres.: Mrs. J. A. Johnson
Roscicrion Fellowship
P.O. Box 713, Oceanside 92057 722-2792

PACIFIC BEACH GARDEN CLUB

Meets Second Monday, 7:30 p.m. Community Club House, Gresham and Diamond Sts., Pacific Beach
Pres.: Mrs. Charles E. Domlar
5158 Hastings Rd., S.D. 92116 283-3642

PALOMAR CACTUS & SUCULENT SOCIETY

Third Saturday, 1 p.m., Palomar College Foreign Language Building, Room F22
Pres.: Mrs. Katie Melendicks
P.O. Box 111, Del Mar 92014 755-4047

POWAY VALLEY GARDEN CLUB

2nd Wednesday, 9:30 a.m., Community Church
Pres.: Mrs. Leo Ostrom
15222 Hilltop Circle, Poway 92064 749-3708

RANCHO SANTE FE GARDEN CLUB

Second Tuesday—Club House, 2:00 p.m.
Pres.: Mrs. John E. Grimm
P.O. Box 241, Rancho Santa Fe 92067 756-1106

SAN CARLOS GARDEN CLUB

Fourth Tuesday, San Carlos Club, 6955 Golfcrest Drive
Pres.: Mrs. Glenn F. Bliss
275 Cowles Mountain, San Diego 92119 463-4349

SAN DIEGO BROMELIAD SOCIETY

Second Monday, 7:30 p.m. Meets at home of president
Pres.: Mrs. Cleaves Hardin
9295 Harness Rd., Spring Valley 92077 469-3038

SAN DIEGUITO GARDEN CLUB

Third Wednesday, Seacoast Savings Building, Encinitas, 10 a.m.
Pres.: Mrs. Waldo Vogt
773 Barbara Ave., Solana Beach 92075 755-4772

SANTA MARIA VALLEY GARDEN CLUB

Second Monday, Ramona Women's Club House, 5th and Main, 9:30 a.m.
Pres.: Mrs. W. F. Strubbe
161 Steffy Lane, Ramona 92065 789-1157

SWEETWATER JUNIOR GARDEN CLUB

First Monday, 7:30 p.m. Meets at home of Temporary President
Temp. Pres.: Cleaves Hardin
9195 Harness Rd., Spring Valley 92077 469-3038

VILLE GARDEN CLUB, POWAY

Meets 3rd Thursday, 10 a.m. Homes of members
Pres.: Mrs. Brown Thompson III
16728 Espola Rd., Poway 92064

VISTA GARDEN CLUB

First Friday, Vista Rec. Center 1:00 p.m.
Pres.: Mrs. Henry C. Shultz
1847 Alta Vista Dr., Vista 92083

VISTA MESA GARDEN CLUB

Second Tuesday, 2 p.m. Family Association Center
Pres.: Mrs. Clara Haskins
2352 El Prado, Lemon Grove 92045 465-0910

Can You Resist . . .

rushing water to a wilting plant?
pulling up a weed in a neighbor's garden?
being flattered when your neighbor asks you
what or how to plant?
No? You're a gardener. Welcome!

Welcome as a typical reader of **CALIFORNIA GARDEN**.
And as simply as that, we ask you to

THINK AND CONSIDER

That in CALIFORNIA GARDEN, the San Diego Floral Association has carried on a 57 year endeavor to promote horticultural beauty for people. It takes many money raising projects to keep the magazine going. The Association-sponsored Christmas Lights Bus Tour and the recent North Shores Garden Bus Tour are among the events which help to pay publication costs.

That the magazine also has been supported and encouraged by the advertising of business men and women who believe in our aims.

How much concentrated garden and plant information is offered in CALIFORNIA GARDEN. Do you realize that there is more information than advertising? That it is our policy to keep the ratio of editorial matter to advertising at 3 to 1?

That the cost of this page is equivalent to 30 new subscriptions?

That a greater circulation would make possible the use of color in these pages?

IF, AS A GARDENER, you are sensitive to the the needs of a plant, extend your sensitivity to the needs of CALIFORNIA GARDEN . . . San Diego's own.

GIVE CALIFORNIA GARDEN TO PEOPLE LIKE YOURSELF

FOR CHRISTMAS—An informative and helpful gift.

It's \$2.50 — published 6 times a year.

Send gift names to

CALIFORNIA GARDEN BALBOA PARK SAN DIEGO, CALIFORNIA 92101

A card to the recipient will acknowledge each gift

1969

CALIFORNIA GARDEN—60

SAN DIEGO - - - - —200